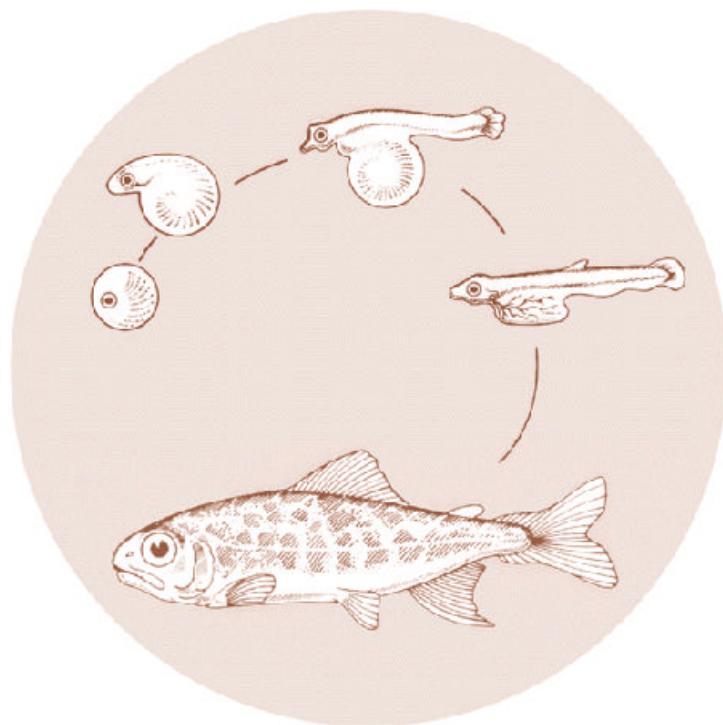


February 2002

**ANNUAL CODED-WIRE TAG PROGRAM
WASHINGTON MISSING PRODUCTION GROUPS**

Annual Report 2000



DOE/BP-00000094-1



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ANNUAL CODED-WIRE TAG PROGRAM

WASHINGTON

**MISSING PRODUCTION GROUPS
ANNUAL REPORT FOR 2000**

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Project Number 1982-013-04
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ABSTRACT

The Bonneville Power Administration (BPA) funds the "Annual Coded-wire Tag Program - Missing Production Groups for Columbia River Hatcheries" project. The Washington Department of Fish and Wildlife (WDFW), Oregon Department of Fish and Wildlife (ODFW) and the United States Fish and Wildlife Service (USFWS) all operate salmon and steelhead rearing programs in the Columbia River basin. The intent of the funding is to coded-wire tag at least one production group of each species at each Columbia Basin hatchery to provide a holistic assessment of survival and catch distribution over time and to meet various measures of the Northwest Power Planning Council's (NWPPC) Fish and Wildlife Program.

The WDFW project has three main objectives: 1) coded-wire tag at least one production group of each species at each Columbia Basin hatchery to enable evaluation of survival and catch distribution over time, 2) recover coded-wire tags from the snouts of fish tagged under objective 1 and estimate survival, contribution, and stray rates for each group, and 3) report the findings under objective 2 for all broods of chinook, and coho released from WDFW Columbia Basin hatcheries.

Objective 1 for FY-00 was met with few modifications to the original FY-00 proposal. Under Objective 2, snouts containing coded-wire tags that were recovered during FY-00 were decoded. Under Objective 3, this report summarizes available recovery information through 2000 and includes detailed information for brood years 1989 to 1994 for chinook and 1995 to 1997 for coho.

INTRODUCTION

The Columbia Basin Fish and Wildlife Program Section 203 (a) proposes an interim goal of doubling the runs of salmon and steelhead in the Columbia River basin. Doubling means increasing the current run size of 2.5 million fish to 5.0 million fish. As part of this effort Section 206 (c) states an objective of exploring methods to substantially increase and improve hatchery production at existing hatcheries. Section 206 (e) (1) states that the Bonneville Power Administration (BPA) shall fund collection of Columbia Basin hatchery data for anadromous fish. These data will include at a minimum: number of returning adults; disposition of returning adults; source and description of bloodstock; actions to maintain genetic diversity; and size, location and time of release of juvenile fish.

A system of monitoring and evaluating survival and contribution is necessary to measure present and future levels of fish production by various hatchery and natural fish production components. In order to evaluate the success of this program in doubling the size of fish runs, a continuous long-term data set is necessary.

In September 1989, under contract from the BPA, the Washington Department of Fisheries (now WDFW) began coded-wire tagging production groups of anadromous salmonids that were not tagged by other programs (i.e. missing production groups). This project began with the tagging of juvenile salmon in 1990 (1989 brood fall chinook and 1988 broods of spring and summer chinook, and coho).

As salmon mature in the ocean they are either harvested in the ocean and freshwater areas, or return to natural spawning areas or hatcheries where they can be enumerated. Each fishery and freshwater spawning location is sampled to recover coded-wire tags. Another BPA funded program, the Coded-wire Tag Recovery Program, is responsible for recovering most of the tags from the fishery and spawning areas. Streamnet, a BPA funded database, makes available to fishery managers and the public Columbia River coded-wire tag information. Recovery data are compiled by WDFW, ODFW and WFWS and then reported to the Pacific States Marine Fisheries Commission (PSMFC). Release and recovery data, sampling rates, and ratios of marked to unmarked fish in the sample are stored in PSMFC computers in the Regional Mark Information System (RMIS) part of the BPA funded Coded-wire Tag Recovery Program. These data are used to estimate survival and contribution rates to each fishery for every hatchery or wild production group. Calculated survival and contribution rates are then used as a relative measure of each production group's effectiveness in meeting program goals, which directs future efforts in maintaining or enhancing fish runs in the Columbia Basin and provides valuable information to salmon harvest managers.

Data generated by this and companion projects are used to evaluate hatchery effectiveness by determining survival rates that are used to determine the number of adult fish of each species that each hatchery produces. Having contiguous data allows measurement of annual variation in the number of adults produced each year which then allows judgment on the effectiveness of the hatchery system, in meeting NWPPC Measures, particularly those under Section 8.4C, "Marking of Hatchery Salmon". Because of the utility of the coded-wire tag as a stock assessment tool, the recovery

information provided by these projects helps meet other NWPPC Measures such as those under Sections 6.1, 7.2, 8.1, 8.2, and 8.3. In addition, data generated by coded-wire tags are used by fishery managers to assess long term changes in stock abundance, in modeling of wild stock abundance, for run reconstruction analysis to determine strength of individual runs within the Basin, and to meet obligations under U.S. v. Oregon and the Pacific Salmon Treaty. Lastly, WDFW uses these data to meet compliance under Section 7 and Section 10 consultation with the National Marine Fisheries Service, which regulates hatchery production under the Endangered Species Act.

APPROACH

The goals of this program are to use the coded-wire tag (CWT) as a tool to estimate survival and fishery contribution of hatchery reared salmon from WDFW Columbia River hatcheries. The generation of these estimates can then be used for a wide variety of purposes. For this project, meeting the objectives listed below will allow for evaluation of hatchery effectiveness, meeting NWPPC Program Measures and allow operation of hatcheries in the Columbia Basin consistent with ESA concerns. Work has progressed under the following three objectives:

Objective 1-Coded-Wire Tagging. Coded-wire tag at least one group of fish representative of each hatchery's production of a given species that is currently not being tagged through another program. Coded-wire tagging activities are reported for 2000. This includes yearling and sub-yearling coho and chinook.

Objective 2-CWT Recovery. Recover fish that were coded-wire tagged, decode these tags, and then estimate survival and contribution of each group released each year. In the Columbia River system this objective is accomplished in cooperation with the Pacific States Marine Fisheries Commission, which conducts many of the CWT recovery efforts.

Objective 3. Develop estimates of fishery catch and contribution, and stray rates for chinook and coho released from WDFW Columbia River hatcheries. True stray rates are not reported here, though inferences may be made through the use of tag recovery percentages by disposition at recovery. Stray rates are reported and available through the BPA funded project Streamnet. Use these estimates to determine hatchery effectiveness and report the results in an Annual Report submitted to the Bonneville Power Administration.

RESULTS

2000 Coded-Wire Tagging

During 2000 coded-wire tags were implanted in 8,693,122 salmon of all five run types of coho (Type S, Type N) and chinook (Fall, Spring, Summer). An estimated total for all tagging costs was \$817,720. BPA funded tagging costs were estimated at \$210,936, just over 25% of the total. Appendix A provides more detailed tagging information listed by hatchery.

Coded-wire Tagging by Species and Run Type

Fall Chinook- Of the 31,342,161 fall chinook released, 2,333,206 were coded-wire tagged for the year 2000 (Table A). The estimated cost for fall chinook coded-wire tagging in 2000 was \$239,499. The approximate BPA provided portion was \$73,570.

Table A. Tagged releases and Estimated Costs for Year 2000.

Fall Chinook, yr 2000

Hatchery	BY	Tagged Released	Total Released	Est. Cost	BPA Portion
COWLITZ SALMON HATCH	99	196,806	5,585,066	\$22,633	
ELOCHOMAN HATCHERY	99	194,859	1,213,028	\$22,409	\$10,278
FALLERT CR HATCHERY	99	80,897	1,829,932		\$10,152
KALAMA FALLS HATCHRY	99	91,883	1,972,100		\$10,681
KLICKITAT HATCHERY	99	383,405	3,755,872	\$44,092	\$22,197
LYONS FERRY HATCHERY	99	188,125	196,643	\$21,634	
LYONS FERRY HATCHERY	98	441,721	456,401	\$50,798	
NORTH TOUTLE HATCHRY	99	91,189	2,626,958	\$10,487	\$10,001
PRIEST RAPIDS HATCHERY	99	176,121	6,856,000	\$20,254	
RINGOLD SPRINGS HATCHERY	99	410,378	3,436,897	\$47,193	
WASHOUGAL HATCHERY	99	77,822	3,413,264		\$10,261
Totals		2,333,206	31,342,161	\$239,499	\$73,570

Spring Chinook- a total of 1,959,736 spring chinook were released with a coded-wire tag during 2000 (Table B). The estimated cost for spring chinook coded-wire tagging in 2000 was \$159,755. The estimated BPA portion was \$77,578.

Table B. Tagged Releases and Estimated Costs for Year 2000.

Spring Chinook, yr 2000

Hatchery	BY	Tagged Released	Total Released	Est. Cost	BPA Portion
CHIWAWA HATCHERY	98	70,679	75,906	\$8,128	
COWLITZ SALMON HATCH	98	196,301	948,987	\$22,575	
FALLERT CR HATCHERY	98	124,043	362,092		\$14,089
GRAYS RIVER HATCHERY	99	124,314	127,939	\$14,269	
KALAMA FALLS HATCHRY	98	117,036	123,281		\$13,600
KLICKITAT HATCHERY	98	87,481	562,000		\$10,489
KLICKITAT HATCHERY	99	128,843	190,842		\$15,447
LEWIS RIVER HATCHERY	98	288,368	901,371	\$33,162	

METHOW HATCHERY	98	427,364	451,140	\$49,147	
NORTH TOUTLE* (released in 2001)					\$11,112
RINGOLD SPRINGS HATC	98	113,159	391,816		\$12,841
SIMILKAMEEN HATCHERY	98	282,148	293,064	\$32,447	
		1,959,736	4,428,438	\$159,755	\$77,578

Summer Chinook- a total of 2,381,732 summer chinook were coded-wire tagged during 2000 (Table C). The estimated cost for summer chinook coded-wire tagging in 2000 was \$273,899. BPA did not fund any tagging of these summer chinook.

Table C. Tagged Releases and Estimated Costs for Year 2000.

Summer Chinook, yr 2000

Hatchery	BY	Tagged Released	Total Released	Est. Cost	BPA Portion
CHELAN PUD HATCHERY	98	215,646	267,256	\$24,799	
DRYDEN POND	98	629,413	649,612	\$72,382	
TURTLE ROCK HATCHERY	99	564,654	911,562	\$64,935	
WELLS HATCHERY	99	340,755	456,970	\$39,187	
CARLTON REARING POND	98	202,544	205,269	\$23,293	
WELLS HATCHERY	98	428,720	457,770	\$49,203	
TURTLE ROCK HATCHERY	98	0	167,382		
		2,381,732	3,115,821	\$273,899	\$0

Type S Coho- a total of 634,252 Type S coho were coded-wire tagged during 2000 (Table D). All were brood year 1998 fish and were released as yearlings. The estimated cost for Type S coho coded-wire tagging in 2000 was \$58,323 the approximate BPA portion was \$41,055.

Table D. Tagged Releases and Estimated Costs for Year 2000.

Coho (Type S), Yr 2000

Hatchery	BY	Tagged Released	Total Released	Est. Cost	BPA Portion
DEEP R NET PENS	98	55,415	431,143	\$6,373	
ELOCHOMAN HATCHERY	98	102,649	338,603	\$11,805	\$10,143
FALLERT CR HATCHERY	98	30,073	525,000	\$3,458	\$3,437
GRAYS RIVER HATCHERY	98	28,774	148,563	\$3,309	\$1,590
LEWIS RIVER HATCHERY	98	74,532	875,563	\$8,571	
NORTH TOUTLE HATCHERY	98	29,649	821,606		\$3,480
SPEELYAI HATCHERY	98	97,445	829,406		\$22,405
SPEELYAI HATCHERY	99	0	72,000		
STEAMBOAT SL NETPENS	98	185,801	193,543	\$21,367	
WASHOUGAL HATCHERY	98	29,914	1,709,687	\$3,440	
		634,252	5,945,114	\$58,323	\$41,055

Type N Coho- a total of 749,944 Type N coho were coded-wire tagged during 2000 (Table E). Estimated cost for Type N coho coded-wire tagging in 2000 was \$86,244. The approximate BPA provided portion was \$18,733.

Table E. Tagged Releases and Estimated Costs for Year 2000.

Coho (Type N) Yr 2000 Releases						
Hatchery	BY	Tagged Released	Total Released	Est. Cost	BPA Portion	
Wild Release	98	21,737	21,737	\$2,500		
COWLITZ SALMON HATCHERY	99	0	651,330			
COWLITZ SALMON HATCHERY	98	233,233	3,807,754	\$26,822		
ELOCHOMAN HATCHERY	98	21,695	700,437	\$2,495		
KALAMA FALLS HATCHERY	98	280,183	752,365	\$32,221		\$3,374
KLICKITAT HATCHERY	98	88,948	1,419,999	\$10,229		\$5,265
LEWIS RIVER HATCHERY	97	0	496			
LEWIS RIVER HATCHERY	98	44,227	3,465,002	\$5,086		
LEWIS RIVER HATCHERY	99	0	436,412			
WASHOUGAL HATCHERY	98	59,921	1,054,749	\$6,891		\$10,094
TOTALS		749,944	12,310,281	\$86,244		\$18,733

Coded-Wire Tag Recovery

In the year 2000, a total of 25,217 tags were recovered from Columbia and Snake River fall, spring, and summer chinook and both types of coho. When expansion factors are applied it is estimated that 39,278 coded-wire tags were collected in all fisheries, surveys and hatcheries. A total of 4,722 tags were recovered from fall chinook; 3,711 from summer chinook; 3,069 from spring chinook; 7,116 from Type N coho and 6,599 from Type S coho.

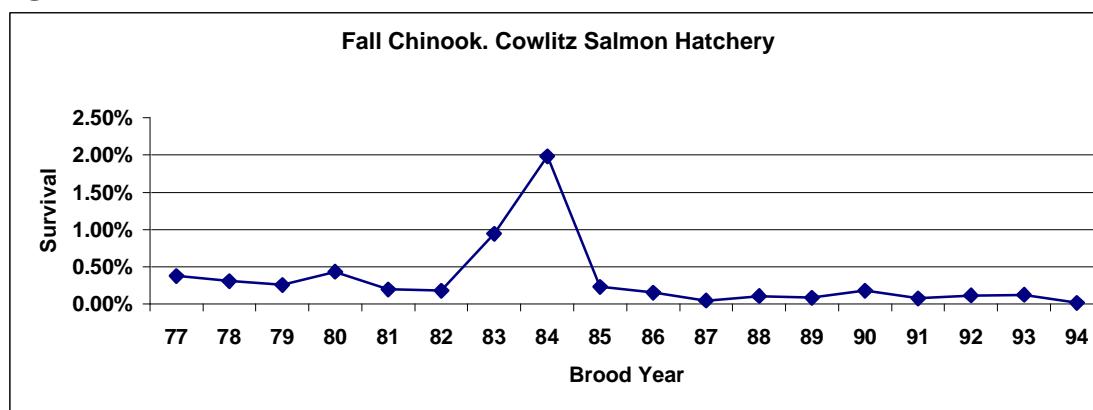
Survival Estimates and Tag Recovery Rates by Hatchery

Summaries of coded-wire tag information for groups of 1989-1994 brood chinook and 1995-1997 brood coho are listed by hatchery. Survival estimates are calculated by dividing the total estimated recoveries by the total number of tagged fish released. Percent recoveries by disposition at recovery are calculated by dividing the total estimated recoveries in each fishery or escapement by the total number of estimated recoveries. These recovery rates may be used to infer fishery contributions, hatchery escapement, and stray rates to spawning grounds. Late (Type-N) coho refer to north migrating coho and fall, or early (Type-S) coho to south migrating coho. An explanation of the categories for disposition at recovery in the percent disposition at recovery tables is available in Appendix E.

Cowlitz Salmon Hatchery

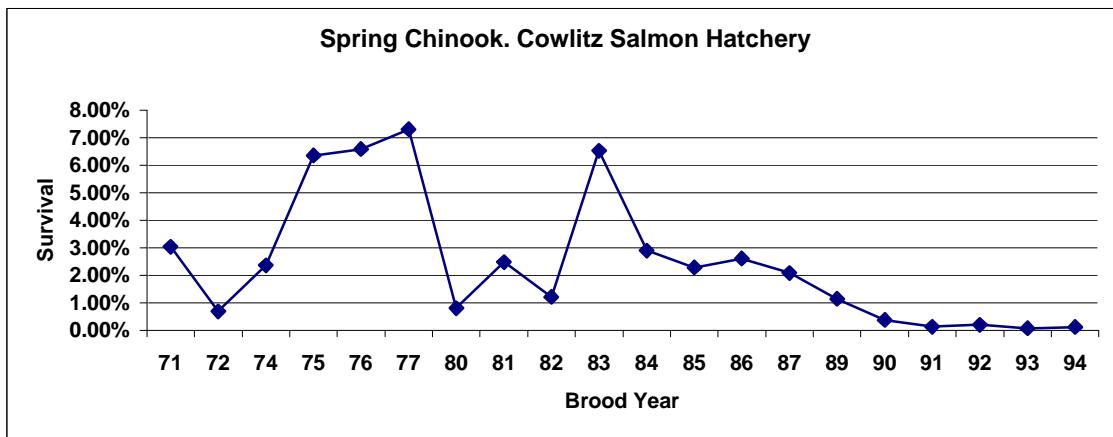
Fall Chinook- The Cowlitz Hatchery rears and releases fall chinook. Most tag groups represent fish released as sub-yearlings in June. Brood year survival rates of fall chinook have a mean of 0.32% (Appendix B) and range from 0.02% for 1994 to 1.99% for 1984 (Figure 1). Most tag recoveries from 1989 to 1994 broods represent hatchery escapement 54.97% (Table 1). Canadian recoveries and spawning ground recoveries were nearly identical at 10.95% and 10.36% respectively.

Figure 1. Survival Rates for Cowlitz Fall Chinook.



Spring Chinook- The Cowlitz Hatchery rears and releases spring chinook. Releases for 2000 were yearlings released in March (Appendix A). Brood year survival rates range from a low of 0.06% in 1993 to a high of 7.31% in 1977 (Figure 2). Mean survival for broods 1971 to 1994 is 2.46% (Appendix B). Survival of spring chinook released as yearlings exceeded those released as sub-yearlings for brood years 1988 through 1991. However, sub-yearling survival was higher for the 1993 brood year (Appendix B). For brood years 1989 through 1994 tag recoveries attributable to hatchery escapement were the most common at 57.89% (Table 1). Washington terminal sport fishing accounted for 13.90% of recovered tags and Canadian recoveries for 11.44%.

Figure 2. Survival Rates for Cowlitz Spring Chinook.



Late (Type N) Coho- Brood year survivals of Type-N coho released from Cowlitz Salmon Hatchery range from a high in 5.50% for 1983 to a low of 0.17% for 1991 (Figure 3). Mean survival for brood years 1971 to 1996 is 2.06% (Appendix A). Data for brood years 1995 and 1996 is incomplete. These years featured an outbreak of Cold Water Disease and Bacterial Kidney Disease. Thus, these fish were not tagged to minimize handling. Difficult transition to 100% mark rate was also a contributing factor. The majority (36.03%) of the 1994 and 1997 brood year tag recovery was to hatchery escapement, followed by 34.68% recovered in the Columbia Commercial/Treaty fishery (Table 1).

Figure 3. Survival Rates for Cowlitz Late Coho.

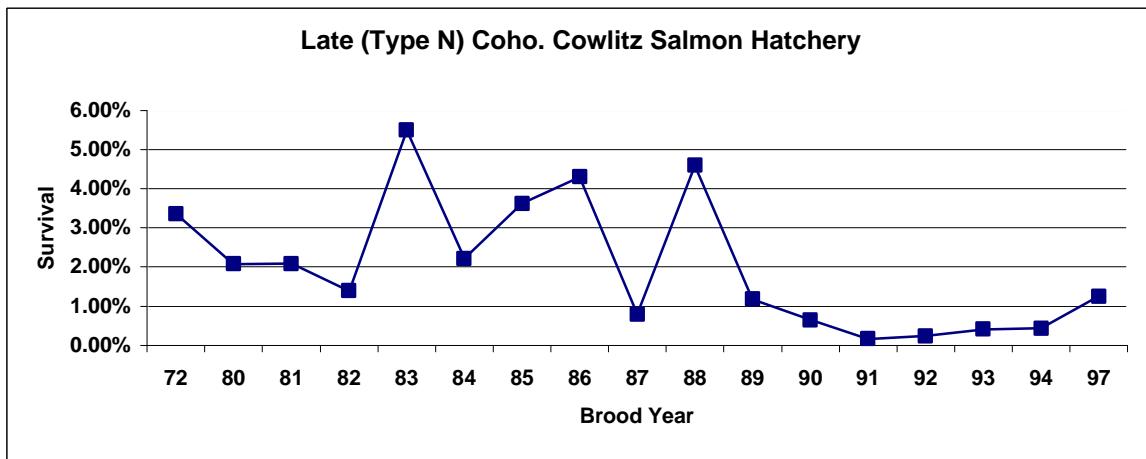


Table 1. Recovery Disposition for Cowlitz Salmon Hatchery Salmonids.

Cowlitz Salmon Hatchery	Type N Coho BY 1994, 1997	Spring Chinook BY 1989-1994		Fall Chinook BY 1989-1994		
Disposition of Recovery	Tag Rec	Percent	Tag Rec	Percent	Tag Rec	Percent
Alaska	0	0.00%	136	1.24%	60	4.92%
Canada	1	0.06%	1257	11.44%	85	6.97%
Oregon	156	9.58%	233	2.12%	56	4.59%
California	0	0.00%	0	0.00%	0	0.00%
Wa. Coastal Sport	289	17.74%	458	4.17%	44	3.61%
Columbia Estuary Sport	11	0.68%	127	1.16%	11	0.90%
Lower Columbia Sport	0	0.00%	41	0.37%	5	0.41%
Terminal Sport		0.00%	1527	13.90%	44	3.61%
WA Commercial\Treaty Coastal	19	1.17%	526	4.79%	78	6.39%
Columbia Commercial\Treaty	565	34.68%	119	1.08%	17	1.39%
Hatchery Escapement	587	36.03%	6359	57.89%	714	58.52%
Spawning Ground Escapement	1	0.06%	201	1.83%	106	8.69%
Total Tags Recovered	1629		10984		1220	

Eastbank Hatchery Complex

Spring Chinook- Spring chinook are released from acclimation ponds on the Chiwawa River. Fish are released as yearlings in April and May. Spring chinook have a mean survival rate of 0.11% (Appendix B) and range from 0.03% for brood year 1992 to 0.43% for 1989 (Figure 4). Most tag recoveries from the 1989 to 1994 broods represent spawning ground escapement at 61.69% (Table 2). Hatchery escapement accounted for 24.63% of recoveries.

Figure 4. Survival Rates for Chiwawa Spring Chinook.

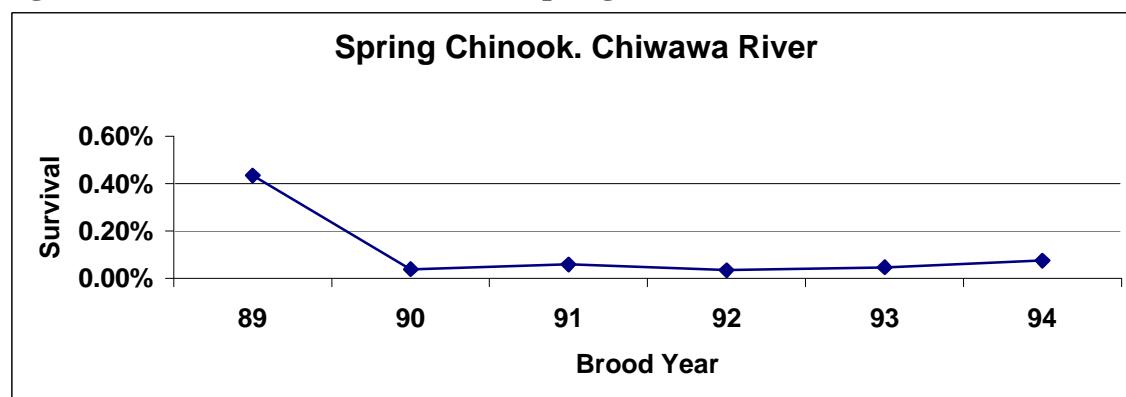


Table 3. Recovery Disposition of Chiwawa Spring Chinook.

EastBank/Chiwawa	Spring Chinook BY 1989-1994	
Disposition of Recovery	Tag Rec	Percent
Alaska	0	0.00%
Canada	4	1.00%
Oregon	10	2.49%
California	0	0.00%
Wa. Coastal Sport	0	0.00%
Columbia Estuary Sport	3	0.75%
Lower Columbia Sport	0	0.00%
Terminal Sport	35	8.71%
WA Commercial\Treaty Coastal	3	0.75%
Columbia Commercial\Treaty	0	0.00%
Hatchery Escapement	99	24.63%
Spawning Ground Escapement	248	61.69%
Total Tags Recovered	402	

Summer Chinook- The Eastbank Hatchery Complex rears and releases summer chinook from three locations. Dryden Pond is located on the Wenatchee River; Similkameen Pond is located on the Similkameen River and Carlton Pond is on the Methow River near Twisp.

Dryden Pond releases summer chinook as yearlings in May. Brood year survival rates declined from a high of 0.51% for 1989 to a low of 0.02% for 1993 (Figure 5). Mean survival for broods 1989 to 1994 is 0.18% (Appendix B). For the brood years 1989 through 1994 tag recoveries attributable to spawning ground escapement were the most common at 44.05% (Table 3). However, spawning ground escapement declined from 1989 to 1993. The data for BY 94 exceed all previous numbers for spawning ground escapement (Appendix D).

Similkameen Pond releases summer chinook as yearlings in April or May. Survival rates declined at a rate similar to Dryden Pond released fish for brood years 1989 to 1994 (Figure 5). Mean survival for broods 1989 to 1994 is 0.57% (Appendix B). For the brood years 1989 through 1994 tag recoveries attributable to spawning ground escapement were the most common at 45.39% (Table 3). The spawning ground escapement data for 1994 shows a positive change in the downward trend from 1989-1993 (Appendix D).

Carlton Pond releases summer chinook as yearlings in April and May. Fish were released from this facility for brood years 1990-1994, excluding 1991. Survival were low and ranged from a high of .17% for brood year 1994 to a low of 0.01% for 1993 (Figure 5). Mean survival for this stock is .07% (Appendix B). Hatchery escapement and spawning ground escapement accounted for the majority of tag recoveries with 20.43% and 57.85% (Table 3).

Figure 5. Survival rates for Eastbank Summer Salmonids.

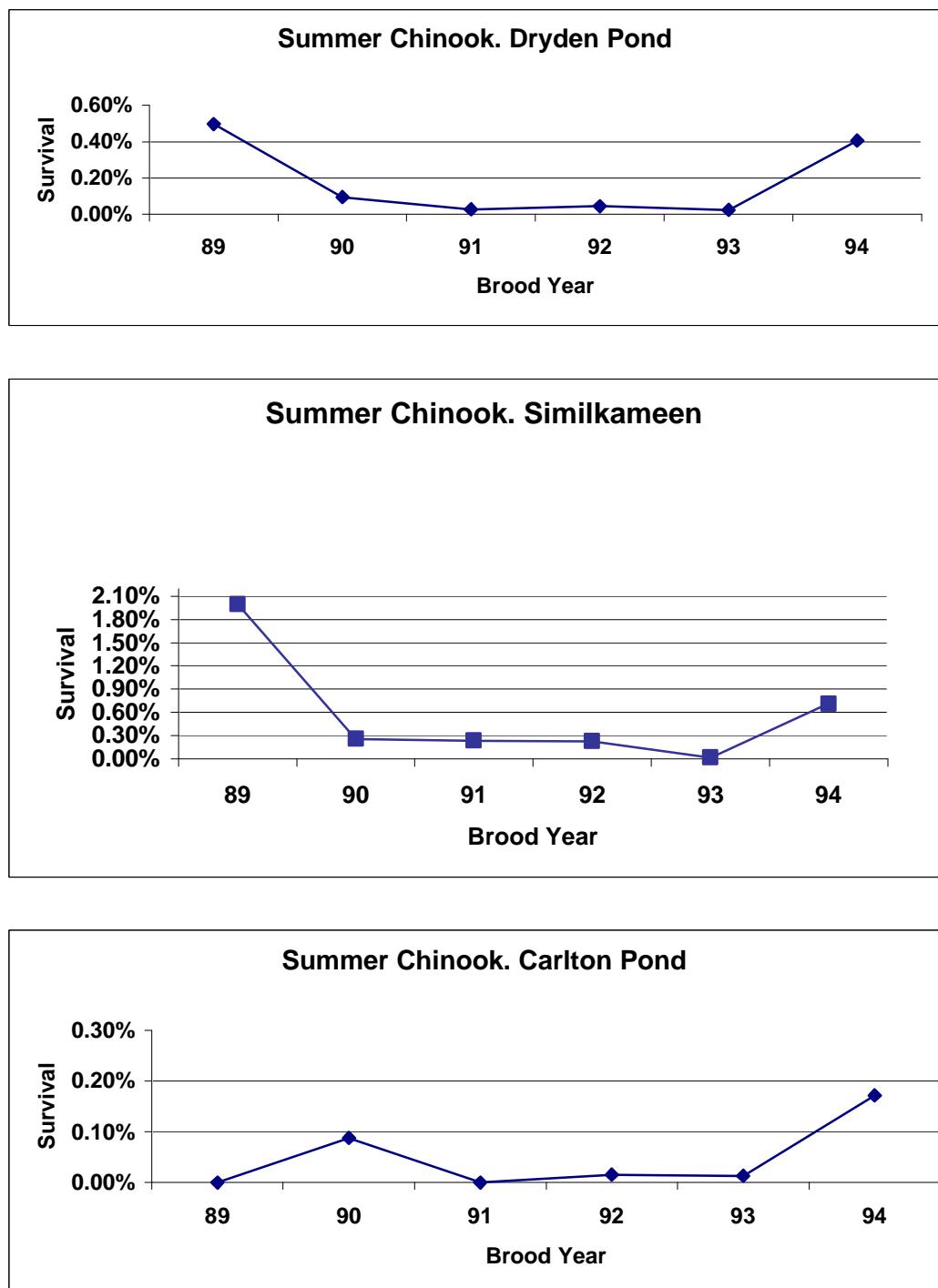


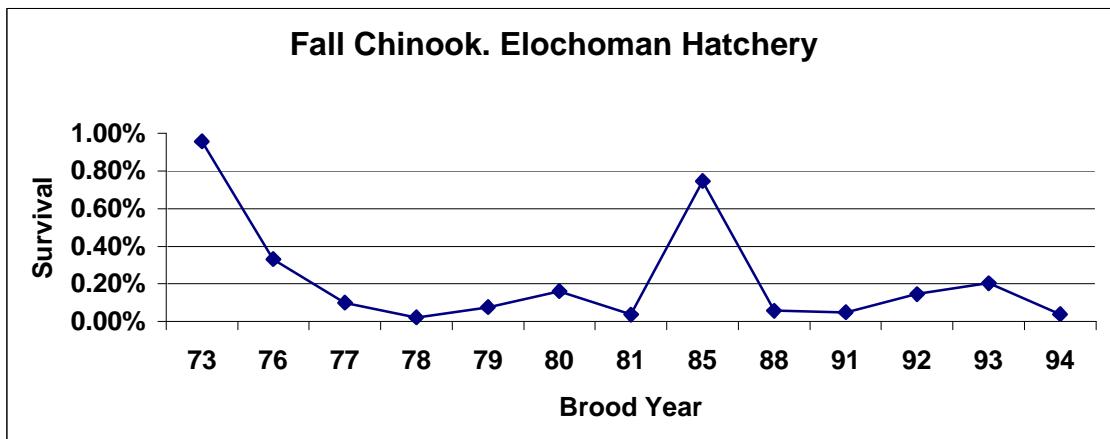
Table 3. Recovery Dispositions for Eastbank Summer Chinook.

EastBank Summer Chinook	Dryden Pond BY 1989-1994		Similkameen Pond BY 1989-1994		Carlton Pond BY 1990, 1992-1994	
	Disposition of Recovery	Tag Rec	Percent	Tag Rec	Percent	Tag Rec
Alaska	665	21.73%	1336	15.47%	155	14.39%
Canada	332	10.85%	983	11.38%	46	4.27%
Oregon	75	2.45%	66	0.76%	18	1.67%
California	4	0.13%	9	0.10%	0	0.00%
Wa. Coastal Sport	6	0.20%	38	0.44%	2	0.19%
Columbia Estuary Sport	4	0.13%	30	0.35%	0	0.00%
Lower Columbia Sport	0	0.00%	24	0.28%	0	0.00%
Terminal Sport	22	0.72%	13	0.15%	1	0.09%
WA Commercial\Treaty Coastal	32	1.05%	63	0.73%	3	0.28%
Columbia Commercial\Treaty	37	1.21%	137	1.59%	9	0.84%
Hatchery Escapement	535	17.48%	2018	23.36%	220	20.43%
Spawning Ground Escapement	1348	44.05%	3921	45.39%	623	57.85%
Total Tags Recovered	3060		8638		1077	

Elochoman Hatchery

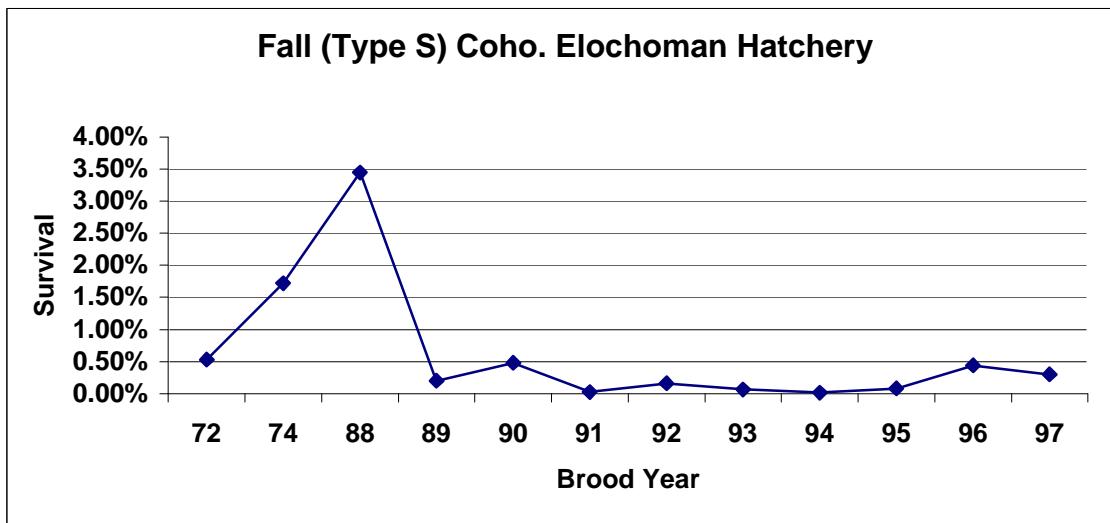
Fall Chinook- The Elochoman Hatchery rears and releases tule fall chinook. Most tag groups represent fish released as sub-yearlings in June. Survival rates of fall chinook have a mean of 0.23% (Appendix B) and range from 0.02% in brood year 1978 to 0.96% in 1973 (Figure 6). Most tag recoveries from 1991 to 1994 broods represent hatchery escapement at 53.86% (Table 4). The 1992 brood year had the highest hatchery escapement with an estimated 3,961 returns (Appendix D).

Figure 6. Survival Rates for Elochoman Fall Chinook.



(Type S) Coho- The Elochoman Hatchery rears and releases Type S coho as yearlings in March and April. Survival rates by brood year range from a low of 0.01% in 1994 to a high of 3.45% in 1988 (Figure 7). Mean survival for broods 1972 to 1997 is 0.62% (Appendix B). For brood years 1995 through 1997 tag recoveries attributable to hatchery escapement were the most common at 50.76% (Table 4).

Figure 7. Survival Rates for Elochoman Early Coho.



Type-N Coho- Survivals of Type-N coho released from Elochoman Hatchery range from a high of 8.04% for brood year 1988 to a low of 0.01% for 1991 and 1992 (Figure 8). Mean survival for brood years 1972 to 1997 is 1.66% (Appendix B). Hatchery escapement and the Columbia River commercial/treaty fisheries accounted for highest tag recoveries for the 1995 to 1997 brood years (Table 4). Coded-wire tag recoveries and survival has increased for brood years 1995, 1996 and 1997.

Figure 8. Survival Rates for Elochoman Late Coho.

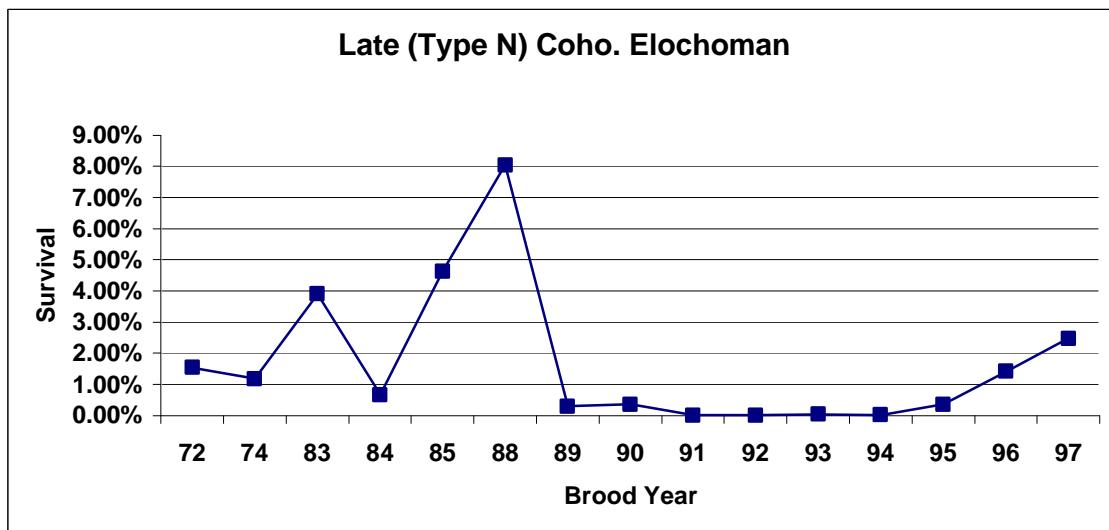


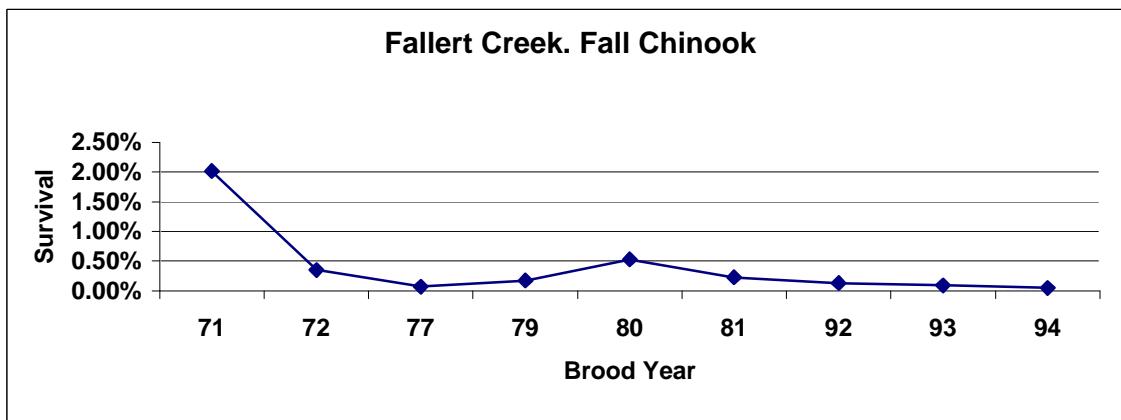
Table 4. Recovery Dispositions for Elochoman Hatchery Salmonids.

Elochoman Hatchery	Type S Coho BY 1995-1997		Type N Coho BY 1995-1997		Fall Chinook BY 1991-1994		
	Disposition of Recovery	Tag Rec	Percent	Tag Rec	Percent	Tag Rec	Percent
Alaska		0	0.00%	0	0.00%	93	13.04%
Canada		0	0.00%	0	0.00%	87	12.20%
Oregon		12	3.67%	180	6.69%	10	1.40%
California		0	0.00%	0	0.00%	0	0.00%
Wa. Coastal Sport		62	18.96%	446	16.57%	18	2.52%
Columbia Estuary Sport		9	2.75%	18	0.67%	11	1.54%
Lower Columbia Sport		0	0.00%	7	0.26%	0	0.00%
Terminal Sport		0	0.00%	0	0.00%	15	2.10%
WA Commercial\Treaty Coastal		2	0.61%	41	1.52%	9	1.26%
Columbia Commercial\Treaty		76	23.24%	938	34.84%	13	1.82%
Hatchery Escapement		166	50.76%	1062	39.45%	384	53.86%
Spawning Ground Escapement		0	0.00%	0	0.00%	73	10.24%
Total Tags Recovered		327		2692		713	

Fallert Creek Hatchery

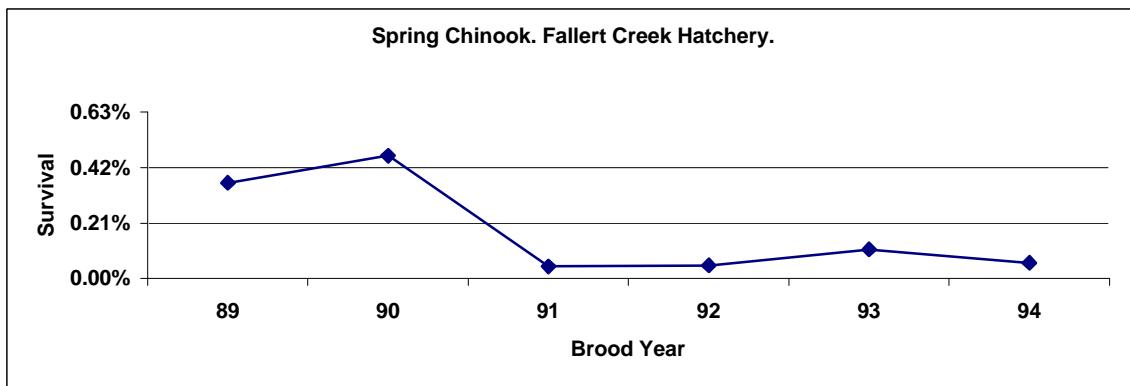
Fall Chinook- The Fallert Creek Hatchery rears and releases tule fall chinook. Chinook were released as sub-yearlings in April and June. Brood year survival rates of fall chinook have a mean of 0.40% (Appendix B) and range from 0.07% for 1977 to 2.01% for 1971 (Figure 9). For brood years 1992-1994, most tag recoveries represent hatchery escapement at 43.90% (Table 5). Canadian and Alaskan fisheries combined for just over 25% of recoveries during this period.

Figure 9. Survival Rates for Fallert Fall Chinook.



Spring Chinook- The Fallert Creek Hatchery rears and releases spring chinook as yearlings in late March or early April. Spring chinook were released from Fallert Hatchery beginning with the 1989 brood year. Brood year survival rates range from a low of 0.05% for 1991 and 1992 to a high of 0.47% for 1990 (Figure 10). Mean survival for broods 1989 to 1994 is 0.18% (Appendix B). For brood years 1989 through 1994 tag recoveries attributable to hatchery escapement were the most common at 52.61% (Table 5). Terminal Sport recoveries were next highest accounting for 16.58% of all recoveries.

Figure 10. Survival Rates for Fallert Spring Chinook.



Type-S Coho- Brood year survivals of Type-S coho released from Fallert Creek Hatchery range from a high of 5.92% for 1989 to a low of 0.25% in 1988 (Figure 13). Mean survival for brood years 1988 to 1996 is 1.02% (Appendix B). The vast majority (69.90%) of the 1995 to 1997 brood year tag recovery was to hatchery escapement (Table 5). The 1995 brood year had the most abundant hatchery escapement of the three brood years, with an estimated return of 209 coho (Appendix D).

Figure 13. Survival Rates for Fallert Early Coho.

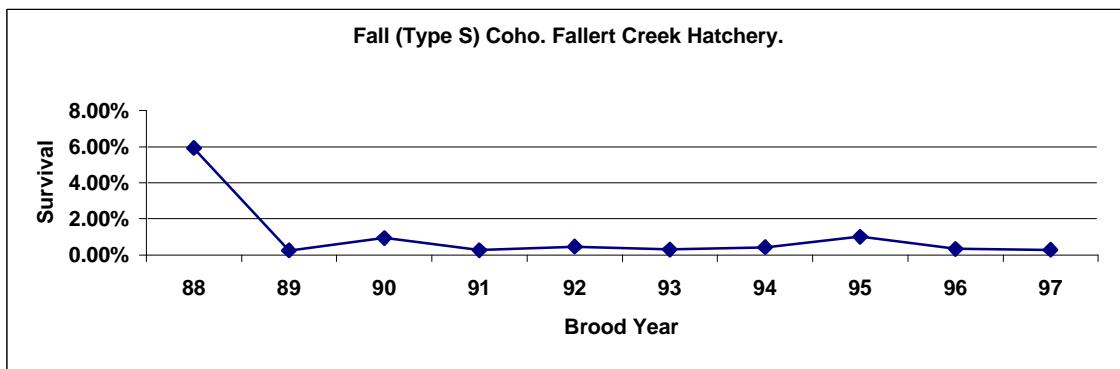


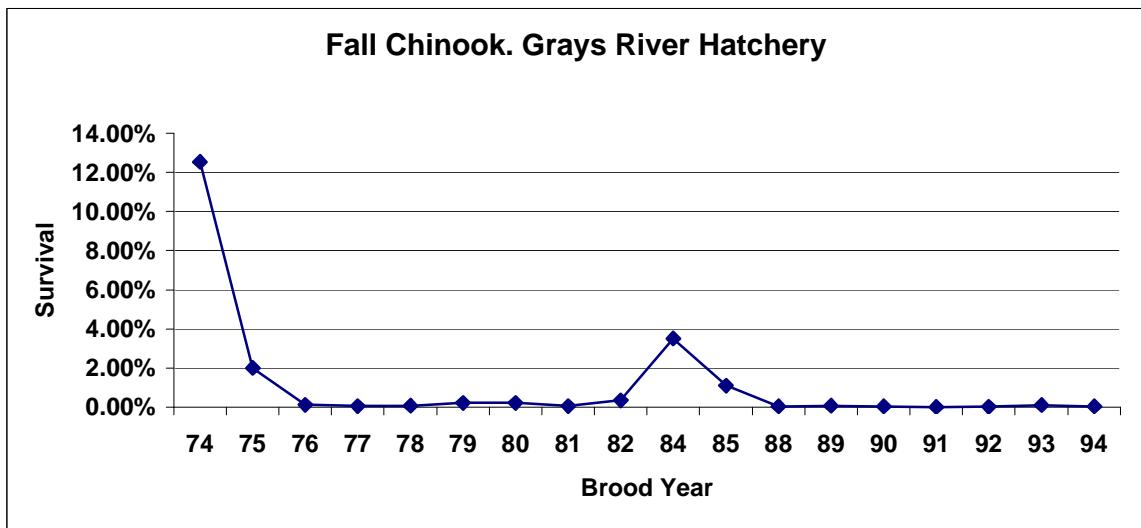
Table 5. Recovery Disposition for Fallert Creek Hatchery Salmonids.

Fallert Creek Hatchery	Type S Coho BY 1995-1997		Spring Chinook BY 1989-1994		Fall Chinook BY 1992-1994	
Disposition of Recovery	Tag Rec	Percent	Tag Rec	Percent	Tag Rec	Percent
Alaska	0	0.00%	39	3.28%	36	14.63%
Canada	0	0.00%	62	5.22%	27	10.98%
Oregon	16	2.68%	23	1.94%	7	2.85%
California	0	0.00%	0	0.00%	0	0.00%
Wa. Coastal Sport	76	12.71%	10	0.84%	5	2.03%
Columbia Estuary Sport	23	3.85%	0	0.00%	9	3.66%
Lower Columbia Sport	11	1.84%	16	1.35%	5	2.03%
Terminal Sport	0	0.00%	197	16.58%	0	0.00%
WA Commercial\Treaty Coastal	0	0.00%	25	2.10%	0	0.00%
Columbia Commercial\Treaty	54	9.03%	6	0.51%	2	0.81%
Hatchery Escapement	418	69.90%	625	52.61%	108	43.90%
Spawning Ground Escapement	0	0.00%	185	15.57%	47	19.11%
Total Tags Recovered	598		1188		246	

Grays River Hatchery

Fall Chinook- The Grays River Hatchery rears and releases tule fall chinook. Typically fish are usually released as sub-yearlings in June. Survival rates by brood year ranged from 0.01% for 1991 to 12.54% for 1974 (Figure 12). The mean survival for all brood years is 1.14% (Appendix B). In brood years 1989 through 1994, hatchery escapement accounted for 40.04% of tag recoveries (Table 6). Canadian fisheries were responsible for 27.59% of recoveries during the same period. Canadian interceptions, however, have declined steadily since 1991 (Appendix D).

Figure 12. Survival Rates for Grays River Fall Chinook.



Type S Coho- The Grays River Hatchery rears and releases Type S coho as yearlings in May or June. Coded-wire tag data was not available for brood year 1995. Brood year survivals of Type-S coho released from Grays River Hatchery range from a high of 3.67% for 1988 to a low of 0.03% for 1974, 1990 and 1992 (Figure 13). Mean survival for brood years 1974 to 1997 is 1.22% (Appendix B). The majority (57.27%) of the tags recovered were to hatchery escapement (Table 6). Since brood year 1993 the Grays River Hatchery has provided coded-wire tagged coho for the Deep River Select Area Fishery Evaluation Program. This is a BPA-funded effort to evaluate fisheries in terminal areas such as tributaries and sloughs of the lower Columbia with the intent of minimizing impact on listed stocks.

Figure 13. Survival Rates for Grays River Early Coho.

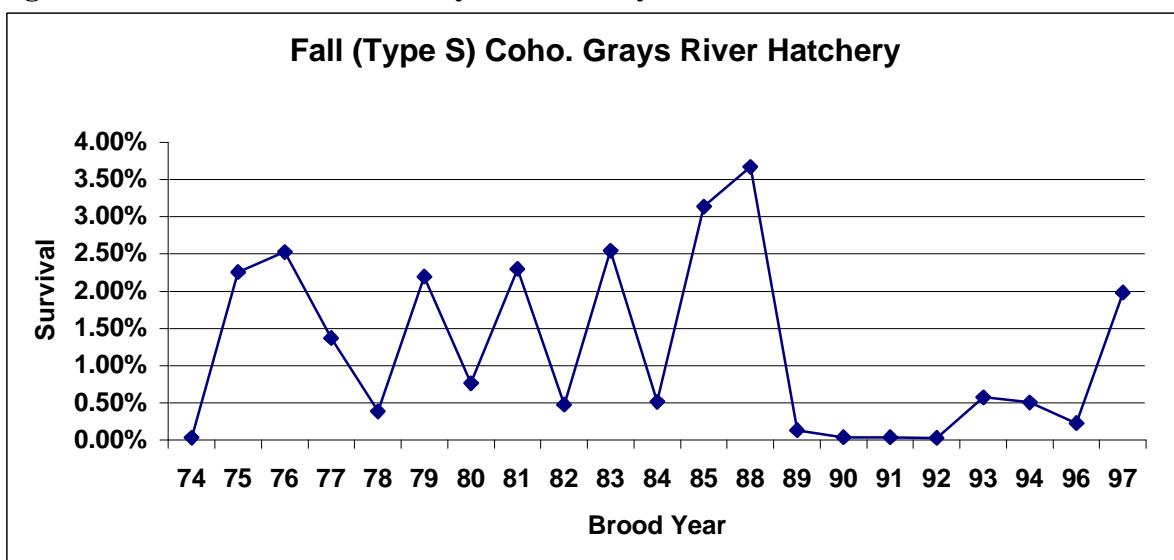


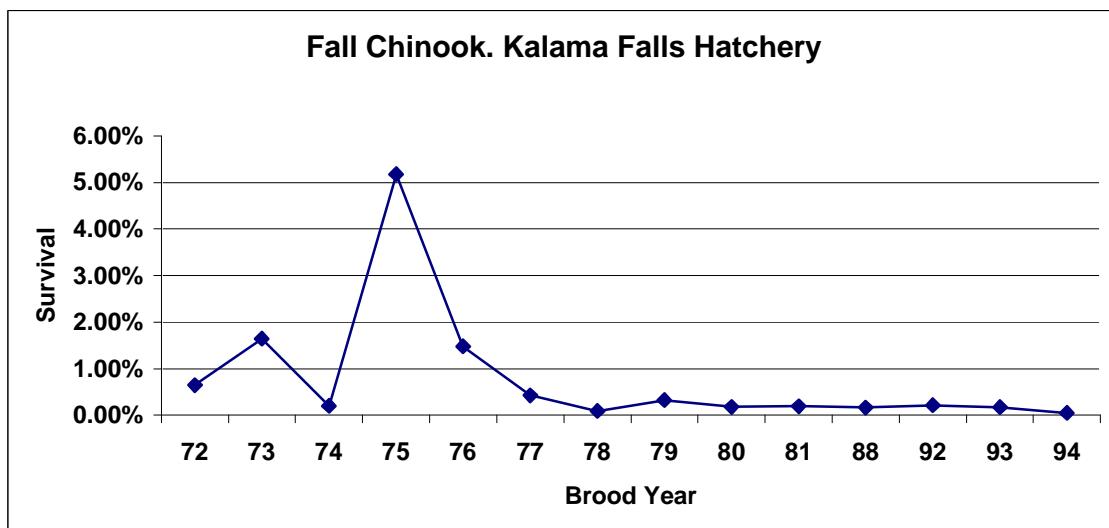
Table 6. Recovery Disposition for Grays River Salmonids.

Grays River Hatchery	Type S Coho BY 1994,1996,1997		Fall Chinook BY 1989-1994	
	Disposition of Recovery	Tag Rec	Percent	Tag Rec
Alaska	0	0.00%	20	4.15%
Canada	0	0.00%	133	27.59%
Oregon	124	9.06%	10	2.07%
California	6	0.44%	0	0.00%
Wa. Coastal Sport	93	6.79%	15	3.11%
Columbia Estuary Sport	41	2.99%	11	2.28%
Lower Columbia Sport	0	0.00%	0	0.00%
Terminal Sport	0	0.00%	0	0.00%
WA Commercial\Treaty Coastal	18	1.31%	16	3.32%
Columbia Commercial\Treaty	303	22.13%	55	11.41%
Hatchery Escapement	784	57.27%	193	40.04%
Spawning Ground Escapement	0	0.00%	29	6.02%
Total Tags Recovered	1369		482	

Kalama Falls Hatchery

Fall Chinook- The Kalama Falls Hatchery rears and releases tule fall chinook. Fish are usually released as sub-yearlings in June. Brood years 1989 through 1991 contained no coded-wire tag releases. Survival rates by brood year ranged from 0.09% for 1978 to 5.17% for 1975 (Figure 14). The mean survival for all brood years is 0.78% (Appendix B). In brood years 1992 thru 1994, spawning ground escapement recoveries were 27.75%, and hatchery escapement accounted for 45.5% (Table 7). The 1988 brood year had three separate tag groups in order to ascertain the effect of release timing on survival. One group was released in each of the months of June, July and August. The tag group released in July had the highest survival (0.30%), while June was the lowest at 0.05% (Appendix C).

Figure 14. Survival Rates for Kalama Falls Fall Chinook.



Type N Coho- The Kalama Falls Hatchery rears and releases Type N coho as yearlings in April. Brood year survivals range from a high of 8.83% for 1988 to a low of 0.07% for 1994. Coho survival dropped dramatically in the late 1980's and stayed low through brood year 1994. The 1996 and 1997 brood years have shown the first significant increase in survival since 1985 (Figure 15). Mean survival for all available brood years is 2.12% (Appendix B). The Columbia River commercial/treaty fishery accounted for 42.86% of the 1995 to 1997 brood years tag recovery (Table 7). The Washington coastal sport fishery recovered 21.83% of tags during the same time period.

Figure 15. Survival Rates for Kalama Falls Late Coho.

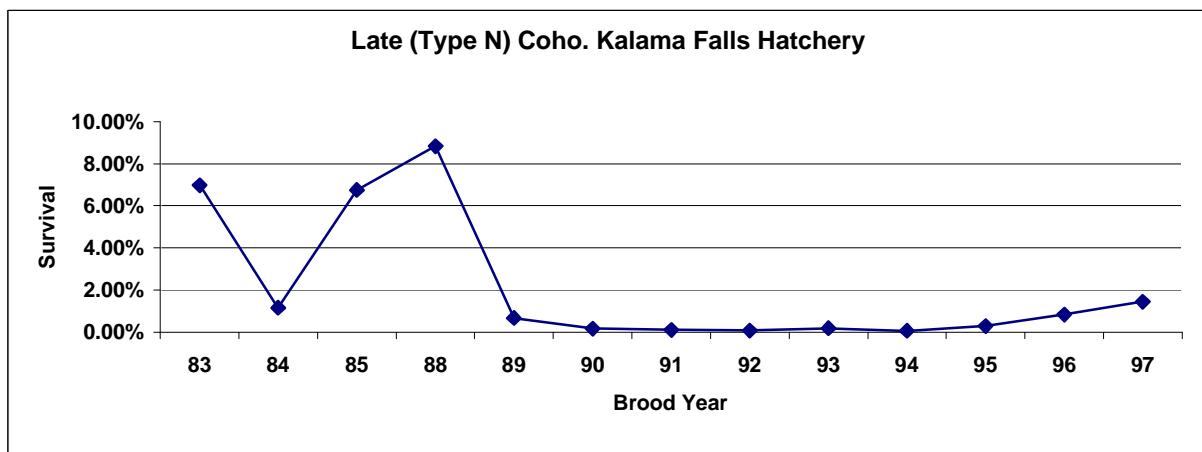


Table 7. Recovery Disposition of Kalama Falls Salmonids

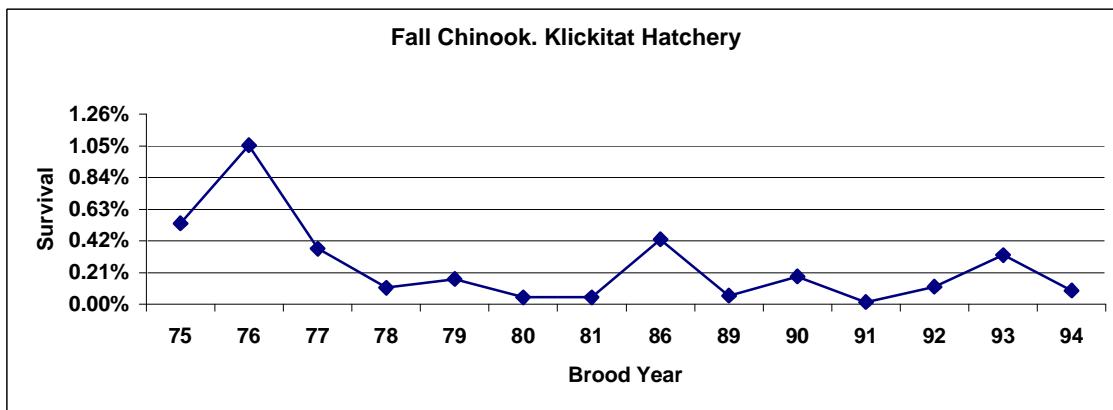
Kalama Falls Hatchery	Type N Coho BY 1995-1997		Fall Chinook BY 1992-1994	
Disposition of Recovery	Tag Rec	Percent	Tag Rec	Percent
Alaska	0	0.00%	40	10.00%
Canada	0	0.00%	45	11.25%
Oregon	65	7.43%	4	1.00%
California	0	0.00%	0	0.00%
Wa. Coastal Sport	191	21.83%	7	1.75%
Columbia Estuary Sport	14	1.60%	2	0.50%
Lower Columbia Sport	0	0.00%	7	1.75%
Terminal Sport	0	0.00%	0	0.00%
WA Commercial\Treaty Coastal	24	2.74%	0	0.00%
Columbia Commercial\Treaty	375	42.86%	2	0.50%
Hatchery Escapement	206	23.54%	182	45.50%
Spawning Ground Escapement	0	0.00%	111	27.75%
Total Tags Recovered	875		400	

Klickitat Hatchery

Fall Chinook- The Klickitat Hatchery rears and releases upriver bright fall chinook. Most tag groups represent fish released as sub-yearlings in May and June. The 1989 to 1994 broods were produced from eggs imported from Lyons Ferry, Priest Rapids, Bonneville and Wells Hatcheries. Since brood stock is not needed, tag recoveries from

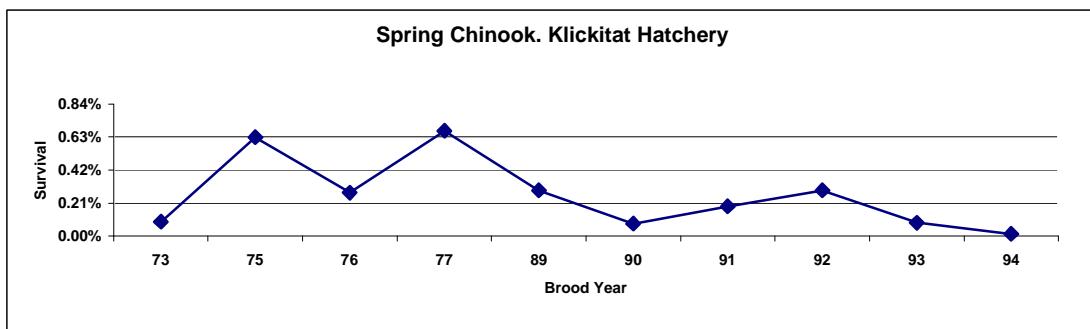
hatchery escapement are low (3.08%) for these brood years (Table 8). The highest tag recovery rates came from Alaska (30.77%), Columbia River commercial/treaty fisheries (21.36%) and Canada (20.52%) for 1989 to 1994 broods (Table 8). Brood year survival rates of fall chinook have a mean of 0.25% (Appendix B) and range from 0.02% for 1991 to 1.06% for 1976 (Figure 16).

Figure 16. Survival Rates for Klickitat Fall Chinook.



Spring Chinook- The Klickitat Hatchery rears and releases spring chinook. Most tag groups represent fish released as yearlings in April and May. Brood year survival rates range from a low of 0.01% in 1994 to a high of 0.67% in 1977 (Figure 17). Mean survival for broods 1973 to 1994 is 0.26% (Appendix B). For brood years 1989 through 1994 tag recoveries attributable to hatchery escapement were very high at 91.10% (Table 8). Oregon recoveries were next highest at 2.69%. In 1993 one tag group was coded-wire tagged and released as sub-yearlings. Survival of this group was low (0.001%) when compared to those released as yearlings (0.270%) (Appendix C).

Figure 17. Survival Rates for Klickitat Spring Chinook.



Type-N Coho- The Klickitat Hatchery rears and releases Type N coho as yearlings in April, May and June. Brood year survivals for 1995 and 1996 were the lowest recorded at 0.01%. The high point for survival was for 1972 at 3.21% (Figure 18). Mean survival for brood years 1972 to 1997 is .99% (Appendix B). Columbia Commercial/Treaty had the highest recovery at 46.15%, and Washington coastal sport fishery had a tag recovery for brood years 1995 to 1997 of 32.69% (Table 8). Hatchery escapement is estimated at only

58 adult coho for 1995, no fish are estimated to return from BY's 1996 and 1997 (Appendix D).

Figure 18. Survival Rates for Klickitat Late Coho.

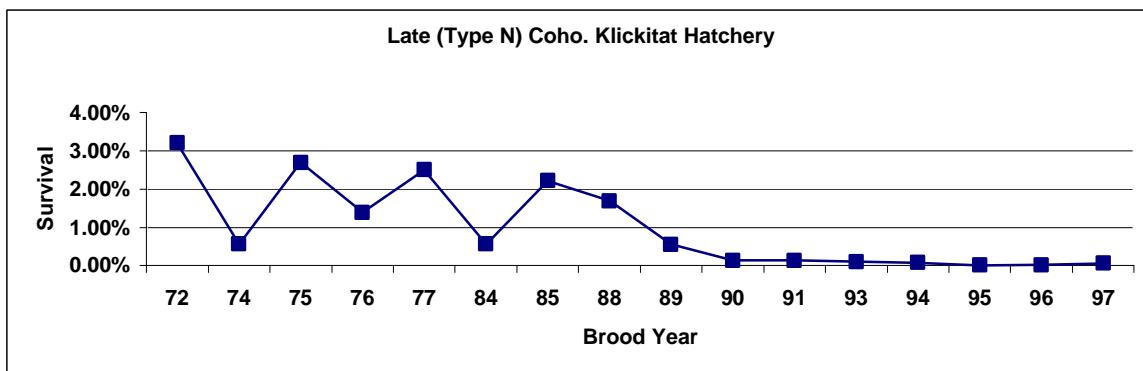


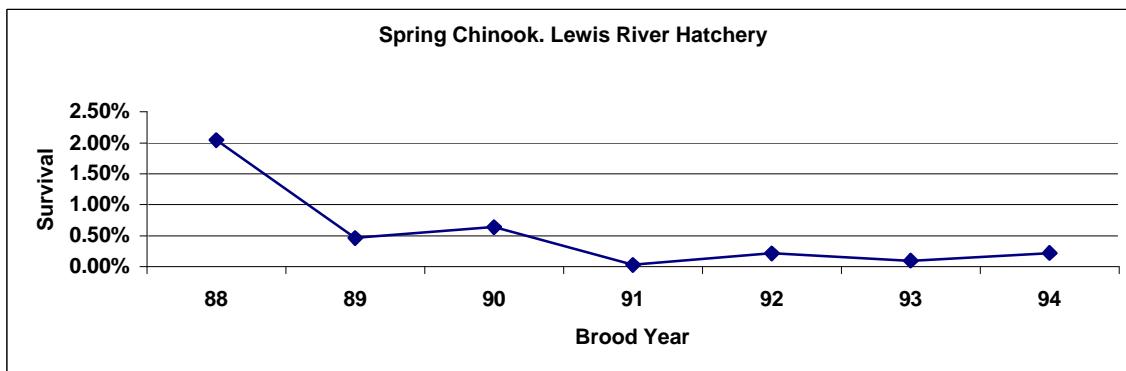
Table 8. Recovery Disposition for Klickitat Hatchery Salmonids.

Klickitat Hatchery	Type N Coho BY 1995-1997		Spring Chinook BY 1989-1994		Fall Chinook BY1989-1994	
Disposition of Recovery	Tag Rec	Percent	Tag Rec	Percent	Tag Rec	Percent
Alaska	0	0.00%	40	1.36%	549	30.77%
Canada	0	0.00%	37	1.26%	366	20.52%
Oregon	2	3.85%	79	2.69%	76	4.26%
California	0	0.00%	0	0.00%	3	0.17%
Wa. Coastal Sport	17	32.69%	0	0.00%	25	1.40%
Columbia Estuary Sport	2	3.85%	0	0.00%	11	0.62%
Lower Columbia Sport	1	1.92%	12	0.41%	46	2.58%
Terminal Sport	0	0.00%	64	2.18%	0	0.00%
WA Commercial\Treaty Coastal	3	5.77%	7	0.24%	9	0.50%
Columbia Commercial\Treaty	24	46.15%	12	0.41%	381	21.36%
Hatchery Escapement	3	5.77%	2673	91.10%	55	3.08%
Spawning Ground Escapement	0	0.00%	10	0.34%	263	14.74%
Total Tags Recovered	52		2934		1784	

Lewis River Hatchery

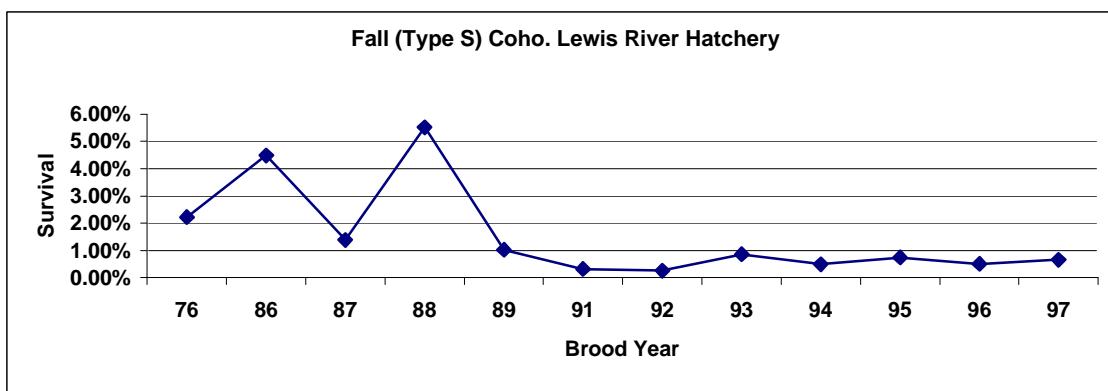
Spring Chinook- The Lewis River Hatchery rears and releases spring chinook. Most tag groups represent fish released as yearlings in March. Survival rates of spring chinook have a mean of 0.53% (Appendix B) and range from 0.03% for brood year 1991 to 2.04% for 1988 (Figure 19). Terminal sport fisheries accounted for 37.15% for combined brood years 1989 to 1994. Hatchery escapement (37.48%) was highest (Table 9). For each of the brood years 1991 through 1994, hatchery escapement estimates exceeded all other recovery disposition categories (Appendix D).

Figure 19. Survival Rates for Lewis River Spring Chinook.



Type S Coho- The Lewis River Hatchery rears and releases Type S coho as yearlings in April and May. Survival rates by brood year range from a low of 0.26% in 1992 to a high of 5.52% in 1988 (Figure 20). Mean survival for broods 1976 to 1997 is 1.54% (Appendix B). For brood years 1995 through 1997 tag recoveries attributable to hatchery escapement were the most common at 85.20% (Table 9). Washington coastal sport fishing accounted for 7.86% of the tag recoveries.

Table 20. Survival Rates for Lewis River Early Coho.



Type-N Coho- Survivals of Type-N coho released from Lewis River Hatchery range from a high of 8.33% for brood year 1986 to a low of 0.20% for 1992 (Figure 21). Mean survival for brood years 1972 to 1997 is 2.00% (Appendix B). Hatchery escapement (58.29) and the Columbia River commercial/treaty (22.97%) fisheries accounted for highest tag recoveries for the 1995 thru 1997 combined brood years (Table 9). The Washington coastal sport fishery recovered 11.80% of the tags for these brood years.

Figure 21. Survival Rates for Lewis River Late Coho.

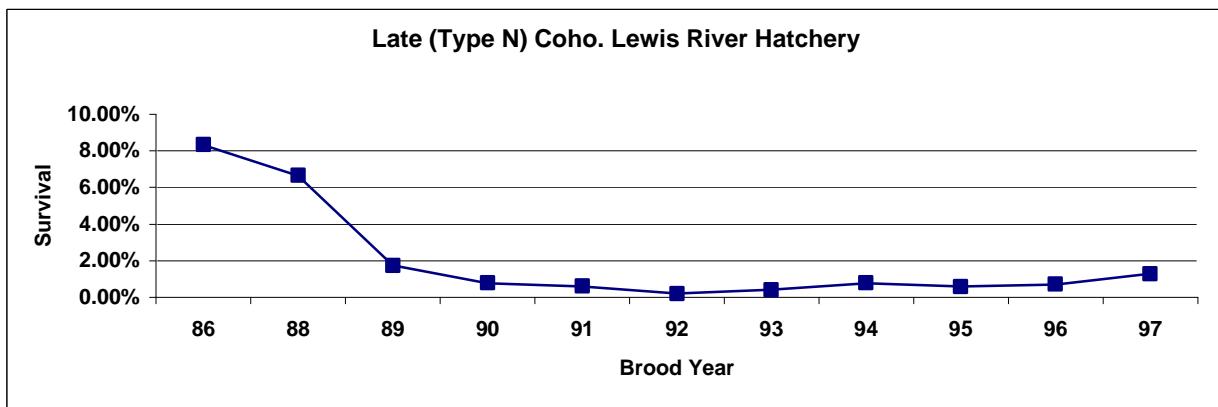


Table 9. Recovery Dispositions of Lewis River Hatchery Salmonids.

Lewis River Hatchery	Type S Coho BY 1995-1997		Type N Coho BY 1994-1997		Spring Chinook BY 1989-1994	
Disposition of Recovery	Tag Rec	Percent	Tag Rec	Percent	Tag Rec	Percent
Alaska	3	0.05%	0	0.00%	128	6.13%
Canada	0	0.00%	4	0.09%	120	5.74%
Oregon	171	3.11%	236	5.30%	16	0.77%
California	0	0.00%	0	0.00%	0	0.00%
Wa. Coastal Sport	432	7.86%	525	11.80%	19	0.91%
Columbia Estuary Sport	72	1.31%	13	0.29%	25	1.20%
Lower Columbia Sport	37	0.67%	7	0.16%	9	0.43%
Terminal Sport	0	0.00%	0	0.00%	776	37.15%
WA Commercial\Treaty Coastal	37	0.67%	49	1.10%	33	1.58%
Columbia Commercial\Treaty	61	1.11%	1022	22.97%	12	0.57%
Hatchery Escapement	4681	85.20%	2594	58.29%	783	37.48%
Spawning Ground Escapement	0	0.00%	0	0.00%	168	8.04%
Total Tags Recovered	5494		4450		2089	

Lyon's Ferry Hatchery

Fall Chinook- The Lyon's Ferry Hatchery rears and releases upriver bright fall chinook. In recent brood years (1991 to 1993) all fish have been released as yearlings in April. 1994 release data shows both yearlings and sub-yearlings. Survival rates by brood year ranged from 0.10% for 1989 to 7.34% for 1983 (Figure 22). The mean survival for all brood years is 1.09% (Appendix B). In brood years 1989 through 1994 hatchery escapement accounted for 64.45% of tag recoveries. Canada recoveries were 9.04% (down 5%) and Columbia River commercial/treaty fisheries were 12.16% (Table 15).

Lyon's Ferry Hatchery released fall chinook for brood year 1988 as yearlings and as sub-yearlings. These fish were coded-wire tagged to compare survival. Yearlings survived at a higher rate than sub-yearlings. Sub-yearling tag group survival ranged from 0.01% to 0.07%; compared to yearling survivals of 1.29% to 1.48% (Appendix C). The 1988 brood year also featured groups that were barged downstream, bypassing several of the dams. Survival of barged sub-yearlings was 0.01%; yearling survival was 1.47%. Non-barged

sub-yearling tag groups survival ranged from 0.02% to 0.07%; yearlings ranged from 1.29% to 1.48% (Appendix C). The 1989 and 1990 broods also had tag groups that were barged as sub-yearlings; survival was 0.11% for 1989 and 0.22% for 1990. Non-barged sub-yearling survival ranged from 0.08% to 0.11% for brood year 1989; the 1990 brood year did not have any fish released as sub-yearlings that were not barged (Appendix C). Barging did not occur in brood years 1991 through 1994.

Figure 22. Survival Rates for Lyons Ferry Fall Chinook.

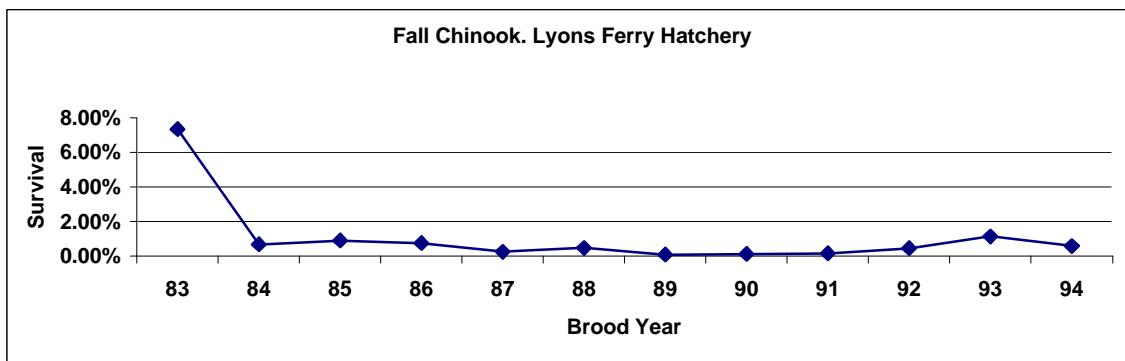


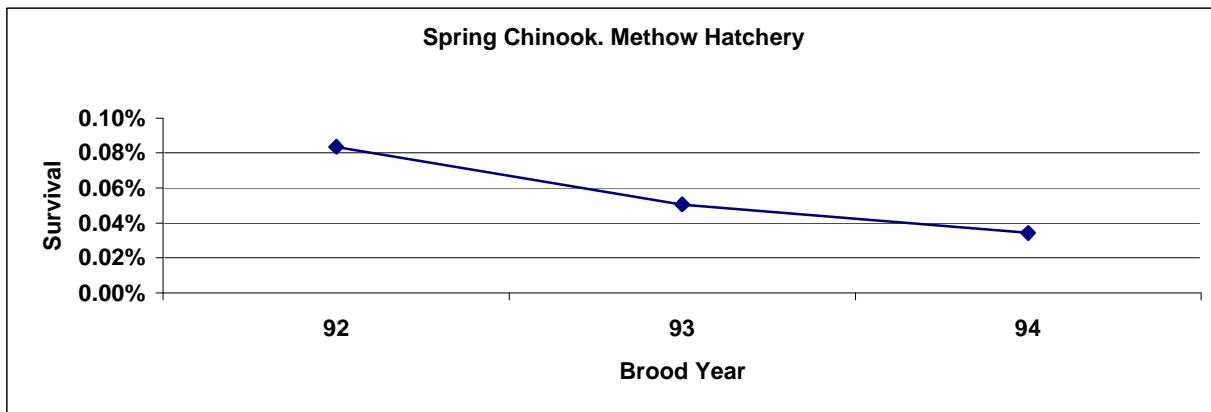
Table 10. Recovery Disposition for Lyons Ferry Salmonids.

Lyons Ferry Hatchery	Fall Chinook BY 1989-1994	
Disposition of Recovery	Tag Rec	Percent
Alaska	436	3.33%
Canada	1182	9.03%
Oregon	544	4.16%
California	31	0.24%
Wa. Coastal Sport	230	1.76%
Columbia Estuary Sport	62	0.47%
Lower Columbia Sport	129	0.99%
Terminal Sport	27	0.21%
WA Commercial\Treaty Coastal	280	2.14%
Columbia Commercial\Treaty	1631	12.47%
Hatchery Escapement	8432	64.45%
Spawning Ground Escapement	100	0.76%
Total Tags Recovered	13084	100.00%

Methow Hatchery

Spring Chinook- The Methow Hatchery began to rear and release coded-wire tagged spring chinook for the 1992 brood year. Fish are released as yearlings in the Chewuch, Twisp and Methow Rivers in April. Survival rates were 0.08% for brood year 1992, 0.05% for 1993 and .03% for 1994 (Figure 23), giving a mean survival of .05% (Appendix B). Hatchery escapement accounted for 97.57% of tag recoveries (Table 11).

Figure 23. Survival Rates for Methow Spring Chinook.



Summer Chinook- The Methow hatchery reared and released Wells Dam Hatchery stock summer chinook for brood year 1991. These fish were released as yearlings in May of 1993 and had a survival rate of 0.02%. Spawning ground escapement accounted for 55.17% of tag recoveries; hatchery escapement was 34.48%. No releases were reported for BY 1994.

Table 11. Recovery Disposition for Methow Hatchery Salmonids.

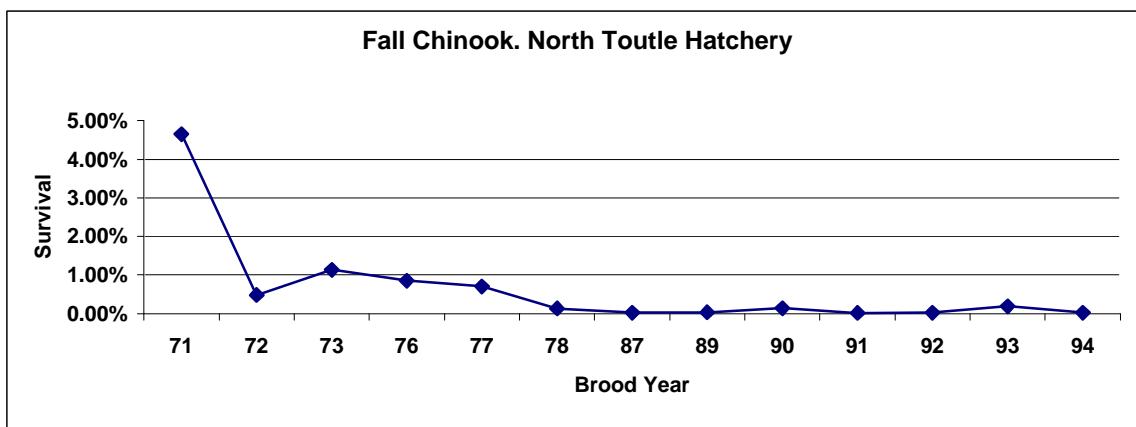
Methow Hatchery	Spring Chinook BY 1992-1994		Summer Chinook BY 1991	
	Tag Rec	Percent	Tag Rec	Percent
Alaska	0	0.00%	6	6.90%
Canada	0	0.00%	0	0.00%
Oregon	0	0.00%	3	3.45%
California	0	0.00%	0	0.00%
Wa. Coastal Sport	0	0.00%	0	0.00%
Columbia Estuary Sport	0	0.00%	0	0.00%
Lower Columbia Sport	0	0.00%	0	0.00%
Terminal Sport	0	0.00%	0	0.00%
WA Commercial\Treaty Coastal	5	1.35%	0	0.00%
Columbia Commercial\Treaty	4	1.08%	0	0.00%
Hatchery Escapement	361	97.57%	30	34.48%
Spawning Ground Escapement	0	0.00%	48	55.17%
Total Tags Recovered	370		87	

North Toutle Hatchery

The North Toutle Hatchery was destroyed during the eruption of Mount St. Helens in 1980. It was rebuilt and began producing fall chinook and Type S coho with brood year 1986. Stock was provided from area hatcheries including the Washougal, Grays and Cowlitz.

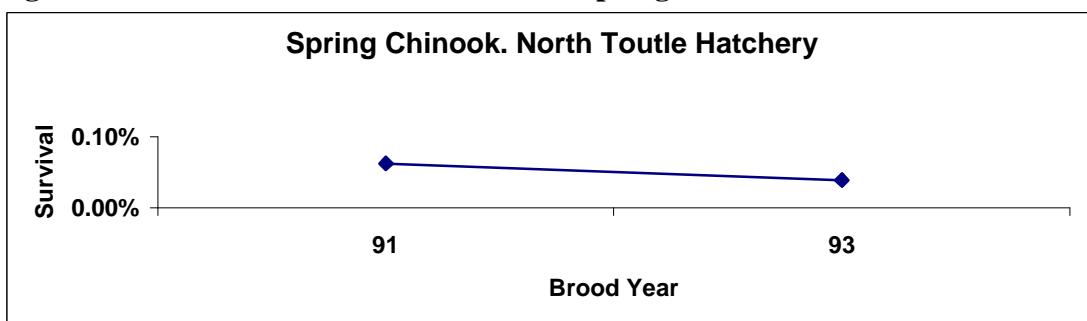
Fall Chinook- The North Toutle Hatchery rears and releases tule fall chinook. Brood year 1989 and 1993 fish were released as sub-yearlings in May and June. Brood year survival rates of fall chinook have a mean of 0.65% (Appendix B) and range from 0.02% for 1991, 1992, and 1994 to 4.65% for 1971 (Figure 24). Most tag recoveries from brood years 1989 to 1994 represent hatchery escapement at 49.29% (Table 12). Terminal sport fishing accounted for 12.53% of recoveries during this period.

Figure 24. Survival Rates for North Toutle Fall Chinook.



Spring Chinook- Spring chinook were released from North Toutle Hatchery beginning with 1991 and 1993 brood years using Cowlitz stock. Brood year survival rates were 0.06% for 1991 and 0.04% for 1993 (Figure 34). Hatchery escapement accounted for 67.44% of tag recovery for these two brood years (Table 12). Canadian recoveries were next highest accounting for 20.93% of all recoveries. There were no reported releases for BY 1994.

Figure 34. Survival rates for North Toutle Spring Chinook



Type-S Coho- Brood year survivals of Type-S coho released from the North Toutle Hatchery range from a high of 4.20% for 1977 to a low of 0.08% for 1992 (Figure 25). Mean survival for brood years 1971 to 1997 is 1.86% (Appendix B). The majority of the 1995 to 1997 brood year tag recovery was to hatchery escapement (Table 12). The 1997 brood year had the most abundant hatchery escapement of the three brood years analyzed with a return of an estimated 16,373 coho (Appendix D).

Figure 25. Survival Rates for North Toutle Early Coho.

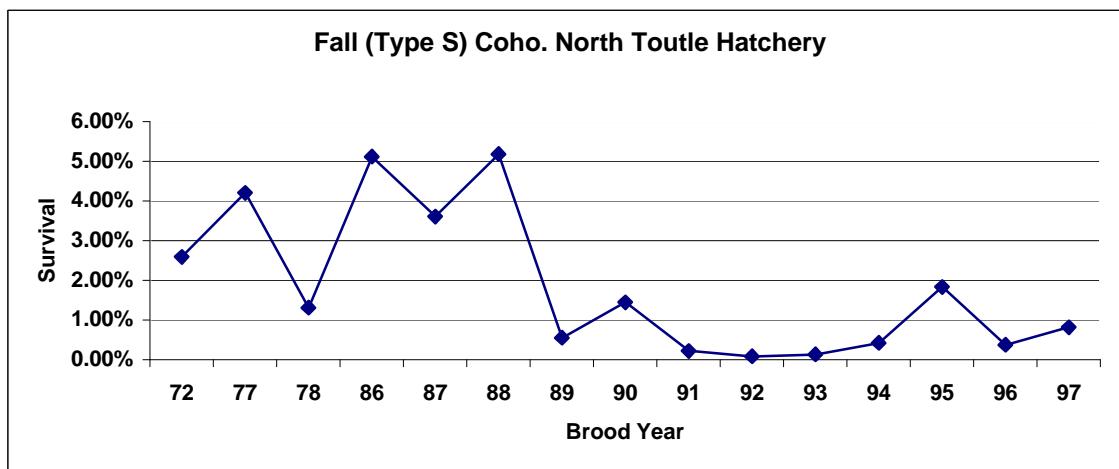


Table 12. Recovery Disposition for North Toutle Hatchery Salmonids.

North Toutle Hatchery	Type S Coho BY 1995-1997		Spring Chinook BY 1991, 1993		Fall Chinook BY 1989-1994	
Disposition of Recovery	Tag Rec	Percent	Tag Rec	Percent	Tag Rec	Percent
Alaska	2	0.14%	0	0.00%	29	5.86%
Canada	1	0.07%	9	20.93%	60	12.12%
Oregon	77	5.46%	0	0.00%	4	0.81%
California	3	0.21%	0	0.00%	0	0.00%
Wa. Coastal Sport	176	12.47%	0	0.00%	18	3.64%
Columbia Estuary Sport	27	1.91%	0	0.00%	6	1.21%
Lower Columbia Sport	104	7.37%	0	0.00%	18	3.64%
Terminal Sport	0	0.00%	5	11.63%	62	12.53%
WA Commercial\Treaty Coastal	0	0.00%	0	0.00%	2	0.40%
Columbia Commercial\Treaty	95	6.73%	0	0.00%	2	0.40%
Hatchery Escapement	926	65.63%	29	67.44%	244	49.29%
Spawning Ground Escapement	0	0.00%	0	0.00%	50	10.10%
Total Tags Recovered	1411		43		495	

Priest Rapids Hatchery

Fall Chinook- The Priest Rapids Hatchery rears and releases upriver bright fall chinook as sub-yearlings in May or June. Survival rates by brood year ranged from 0.03% for 1991 to 2.15% for 1975 (Figure 26). The mean survival for all brood years is 0.69% (Appendix B). For brood years 1989 through 1994 hatchery escapement accounted for 41.79% of tag recoveries. Columbia River commercial/treaty fisheries recoveries were 19.48% of the total (Table 13). Despite a well-utilized fishery in the Hanford Reach,

terminal sport recoveries were low (2.64%). For brood year 1992 three tag groups were released in May and one in June. Survival rates of the May releases ranged from 0.03% to 0.07% (Appendix C); June releases survived at a rate of 0.23%.

Figure 26. Survival Rates for Priest Rapids Fall Chinook.

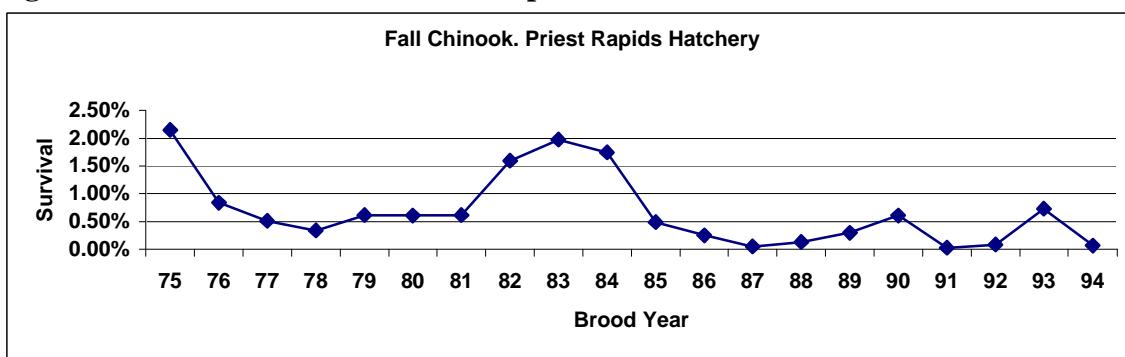


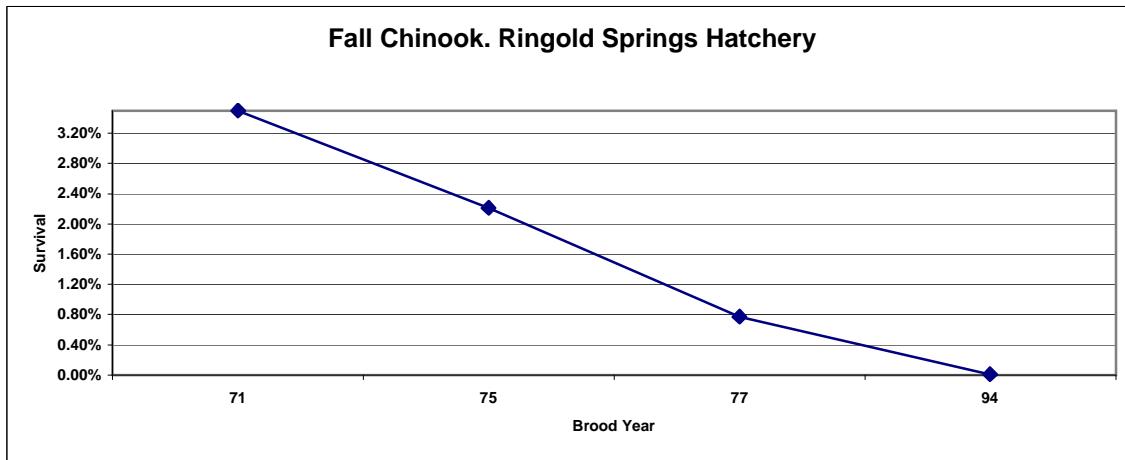
Table 13. Recovery Disposition for Priest Rapids Hatchery Salmonids.

Priest Rapids Hatchery	Fall Chinook BY 1989-1994	
Disposition of Recovery	Tag Rec	Percent
Alaska	478	12.52%
Canada	454	11.89%
Oregon	42	1.10%
California	0	0.00%
Wa. Coastal Sport	46	1.20%
Columbia Estuary Sport	20	0.52%
Lower Columbia Sport	80	2.09%
Terminal Sport	101	2.64%
WA Commercial\Treaty Coastal	7	0.18%
Columbia Commercial\Treaty	744	19.48%
Hatchery Escapement	1596	41.79%
Spawning Ground Escapement	251	6.57%
Total Tags Recovered	3819	

Ringold Springs Hatchery

Fall Chinook- The Ringold Springs Hatchery rears and releases upriver bright fall chinook as sub-yearlings in June. This practice was re-introduced with the 1994 brood year. Fall chinook has not been part of Ringold's program since the late 1970's. The survival rate for the 1994 brood year was .01% (Figure 27). Table 14 shows Canadian fisheries recovering 25% of the tags, and spawning ground escapement accounts for 35%. Over 300,000 tagged fish were released, with approx. 40 being recovered (Appendix C).

Figure 27. Survival Rates for Ringold Springs Fall Chinook.



Spring Chinook- The Ringold Hatchery rears and releases spring chinook as yearlings in April. Survival rates by brood year ranged from 0.03% for 1972 and 1991 to 2.95% for 1977 (Figure 28). The mean survival for all brood years is 0.62% (Appendix B). For brood years 1989 through 1994 hatchery escapement accounted for 58.01% of tag recoveries (Table 14). Terminal sport fisheries recovered 32.32%. Most tag recoveries in the terminal sport fishery were taken from the 1989 brood year.

Figure 28. Survival Rates for Ringold Springs Spring Chinook.

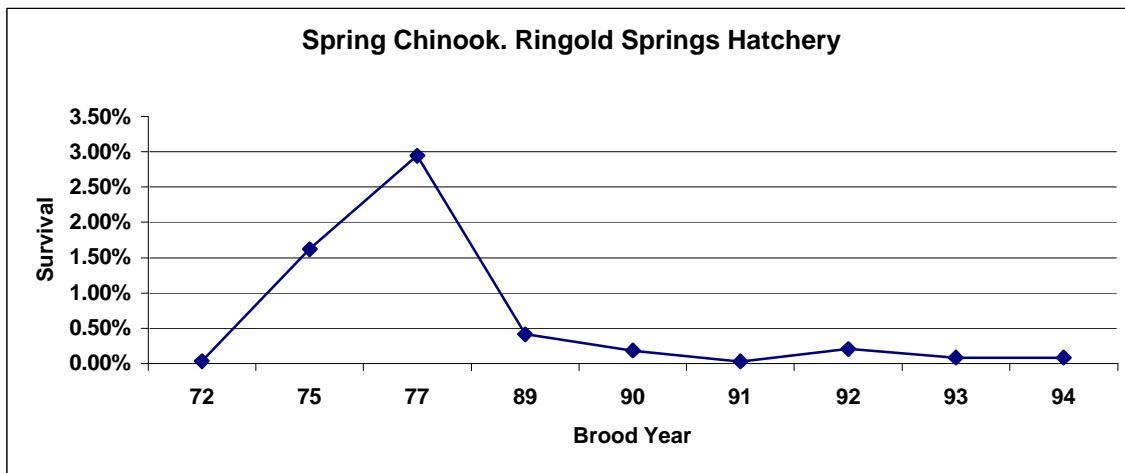


Table 14. Recovery Disposition for Ringold Springs Hatchery Salmonids.

Ringold Springs Hatchery	Spring Chinook BY 1989-1994		Fall Chinook BY 1994	
Disposition of Recovery	Tag Rec	Percent	Tag Rec	Percent
Alaska	0	0.00%	2	5.00%
Canada	0	0.00%	10	25.00%
Oregon	20	5.52%	0	0.00%
California	0	0.00%	0	0.00%
Wa. Coastal Sport	0	0.00%	0	0.00%
Columbia Estuary Sport	0	0.00%	2	5.00%
Lower Columbia Sport	0	0.00%	0	0.00%
Terminal Sport	117	32.32%	0	0.00%
WA Commercial\Treaty Coastal	0	0.00%	2	5.00%
Columbia Commercial\Treaty	3	0.83%	6	15.00%
Hatchery Escapement	210	58.01%	4	10.00%
Spawning Ground Escapement	12	3.31%	14	35.00%
Total Tags Recovered	362		40	

Tucannon Hatchery

The Tucannon Hatchery is a satellite rearing and capture facility operating in conjunction with Lyons Ferry Hatchery. Wild spring chinook returning to the Tucannon River were captured at the Tucannon trap beginning in 1985 to supply brood stock for hatchery releases. Adults are now trapped and transported to the Lyons Ferry Hatchery and spawned there. Fish are hatched and reared at Lyons Ferry until late fall of the first year. They are then transported to acclimation ponds at the Tucannon Hatchery and reared through the winter. Fish are then volitionally released in the spring.

Spring Chinook- The Tucannon Hatchery rears and releases spring chinook as yearlings in March and April (Appendix C). Survival rates by brood year ranged from 0.03% for 1991 and 1994, to 0.47% for 1985 (Figure 29). The mean survival for all brood years is 0.18% (Appendix B). For brood years 1989 through 1994 spawning ground escapement accounted for 7.61% of tag recoveries. Hatchery escapement was 89.13% for the same time period (Table 15). The 1992 brood year had tag groups that were released as sub-yearlings as well as yearlings. The sub-yearling releases had a low survival rate (0.008%) compared to yearling survival (0.127%) (Appendix C).

Figure 29. Survival Rates for Tucannon Spring Chinook.

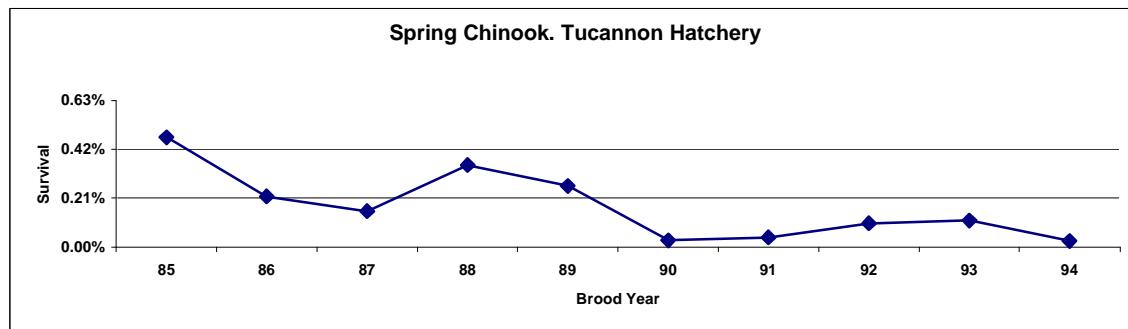


Table 15. Recovery Disposition for Tucannon Hatchery Salmonids.

Tucannon Hatchery	Spring Chinook BY 1989-1994	
Disposition of Recovery	Tag Rec	Percent
Alaska	0	0.00%
Canada	3	1.63%
Oregon	3	1.63%
California	0	0.00%
Wa. Coastal Sport	0	0.00%
Columbia Estuary Sport	0	0.00%
Lower Columbia Sport	0	0.00%
Terminal Sport	0	0.00%
WA Commercial\Treaty Coastal	0	0.00%
Columbia Commercial\Treaty	0	0.00%
Hatchery Escapement	164	89.13%
Spawning Ground Escapement	14	7.61%
Total Tags Recovered	184	

Turtle Rock (Rocky Reach) Hatchery

Fall Chinook- The Turtle Rock Hatchery at Rocky Reach Dam rears and releases upriver bright fall chinook as yearlings and beginning with the 1992 brood year sub-yearlings. Yearlings are released in April and sub-yearlings in June. Survival rates by brood year ranged from 0.07% for 1986 and 1994, to 3.65% for 1983 (Figure 30). The mean survival for all brood years is 0.89% (Appendix B). For brood years 1989 through 1994 the Columbia River commercial/treaty fisheries accounted for 32.57% of tag recoveries. Canadian recoveries were 19.54%; hatchery escapement and spawning ground escapement were low (Table 16). Yearling release survivals were higher than sub-yearling releases for brood years 1992 and 1994. Yearling survival for brood year 1992 was 0.52%; sub-yearling survival was 0.02%. For brood year 1994 yearling survival was 0.13% while sub-yearling survival was 0.007% (Appendix C).

Figure 30. Survival Rates for Turtle Rock Fall Chinook.

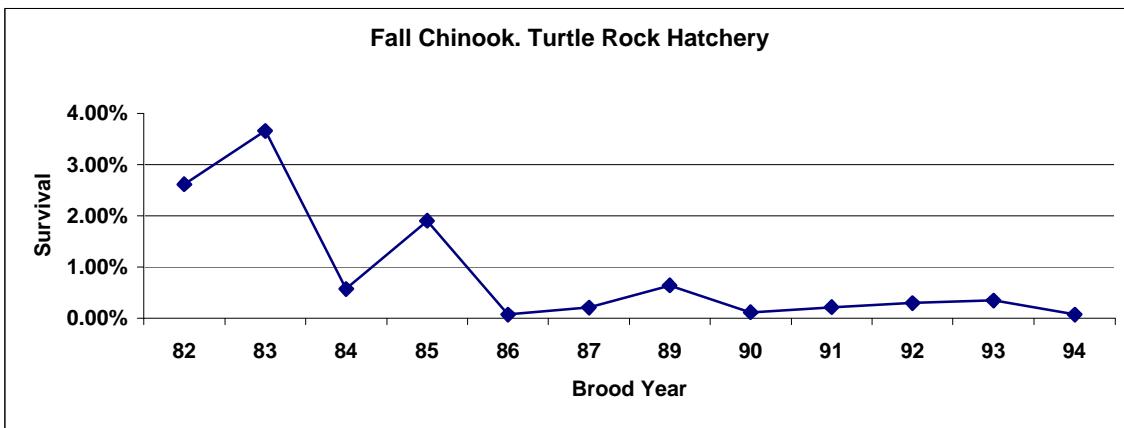


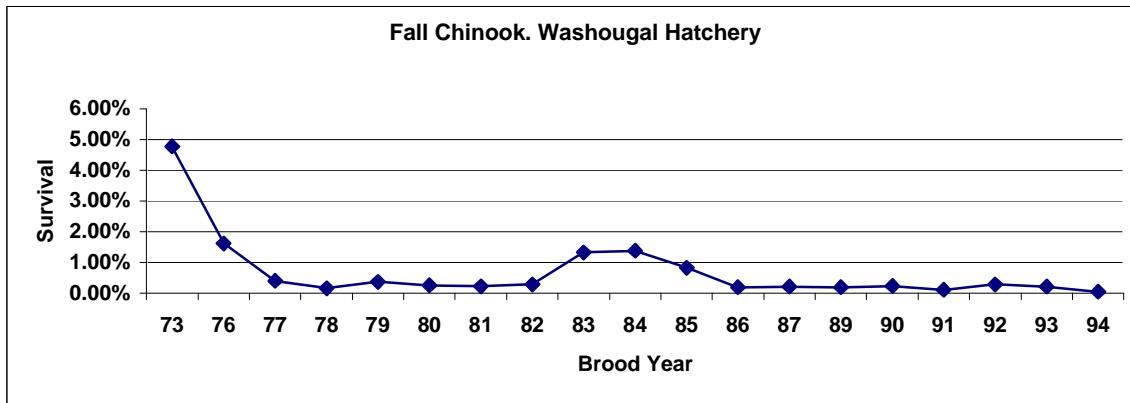
Table 16. Recovery Dispositions for Turtle Rock Hatchery Salmonids.

Turtle Rock Hatchery	Fall Chinook BY 1989-1993	
Disposition of Recovery	Tag Rec	Percent
Alaska	525	17.72%
Canada	579	19.54%
Oregon	99	3.34%
California	1	0.03%
Wa. Coastal Sport	75	2.53%
Columbia Estuary Sport	50	1.69%
Lower Columbia Sport	127	4.29%
Terminal Sport	66	2.23%
WA Commercial\Treaty Coastal	52	1.75%
Columbia Commercial\Treaty	965	32.57%
Hatchery Escapement	284	9.58%
Spawning Ground Escapement	140	4.72%
Total Tags Recovered	2963	

Washougal Hatchery

Fall Chinook- The Washougal Hatchery rears and releases tule fall chinook. Tag groups are usually released as sub-yearlings in May, June or July. Survival rates by brood year ranged from 0.05% for 1994 to 4.78% for 1973 (Figure 31). The mean survival for all brood years is 0.69% (Appendix B). In brood years 1989 through 1994 hatchery escapement accounted for 57.95% of tag recoveries. Spawning ground escapement and Canadian recoveries were 13.46% and 9.83% respectively (Table 17). For the 1992 brood year one tag group was released in June while another was held until August. The survival of the August release group was slightly higher (0.32%) than the group released in June (0.25%) (Appendix C).

Figure 31. Survival Rates for Washougal Fall Chinook.



Type N Coho- The Washougal Hatchery rears and releases Type N coho as yearlings in April. Brood year survivals range from a high of 5.37% for 1978 to a low of 0.11% for 1993 (Figure 32). Mean survival for brood years 1974 to 1997 was 1.85% (Appendix B). Hatchery escapement recovered 29.25% of the total tags for brood years 1995-1997 (Table 13). The Washington coastal sport fishery claimed 18.86% of the tags, while the Columbia River commercial/treaty fisheries collected 34.96%. For brood year 1996 the Columbia River commercial/treaty fisheries took an estimated 8,075 Type N coho, those estimates increased greatly in 1997 to 25,960 (Appendix D).

Figure 32. Survival Rates for Washougal Late Coho.

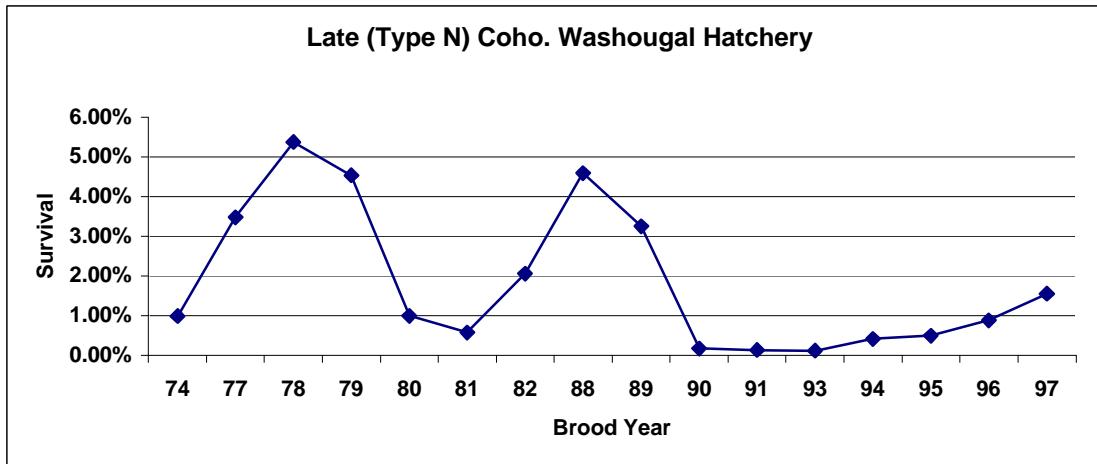


Table 17. Recovery Disposition for Washougal Hatchery Salmonids.

Washougal Hatchery	Type N Coho BY 1995-1997		Fall Chinook BY 1989-1994	
Disposition of Recovery	Tag Rec	Percent	Tag Rec	Percent
Alaska	0	0.00%	92	6.42%
Canada	0	0.00%	141	9.83%
Oregon	204	8.95%	21	1.46%
California	4	0.18%	0	0.00%
Wa. Coastal Sport	430	18.86%	23	1.60%
Columbia Estuary Sport	17	0.75%	3	0.21%
Lower Columbia Sport	109	4.78%	28	1.95%
Terminal Sport	0	0.00%	36	2.51%
WA Commercial\Treaty Coastal	52	2.28%	34	2.37%
Columbia Commercial\Treaty	797	34.96%	32	2.23%
Hatchery Escapement	667	29.25%	831	57.95%
Spawning Ground Escapement	0	0.00%	193	13.46%
Total Tags Recovered	2280		1434	

Wells Dam Hatchery

Summer Chinook- The Wells Dam Hatchery rears and releases summer chinook as yearlings and sub-yearlings. Yearlings are usually released in April, sub-yearlings in June. Survival rates by brood year ranged from 0.33% for 1993 to 0.01% for 1991 (Figure 33). The mean survival for all brood years is 0.16% (Appendix B). For brood years 1989 through 1994 hatchery escapement accounted for 61.13% of tag recoveries. Alaska recoveries were 31.46% of the total (Table 18). For brood year 1993 two tag groups were released as yearlings (Wells Hatchery in Appendix C) and one as sub-yearlings (Wells Dam SP Channel in Appendix C). Yearling releases for this brood year performed better than sub-yearlings, surviving at a 0.478% rate compared to 0.022% respectively.

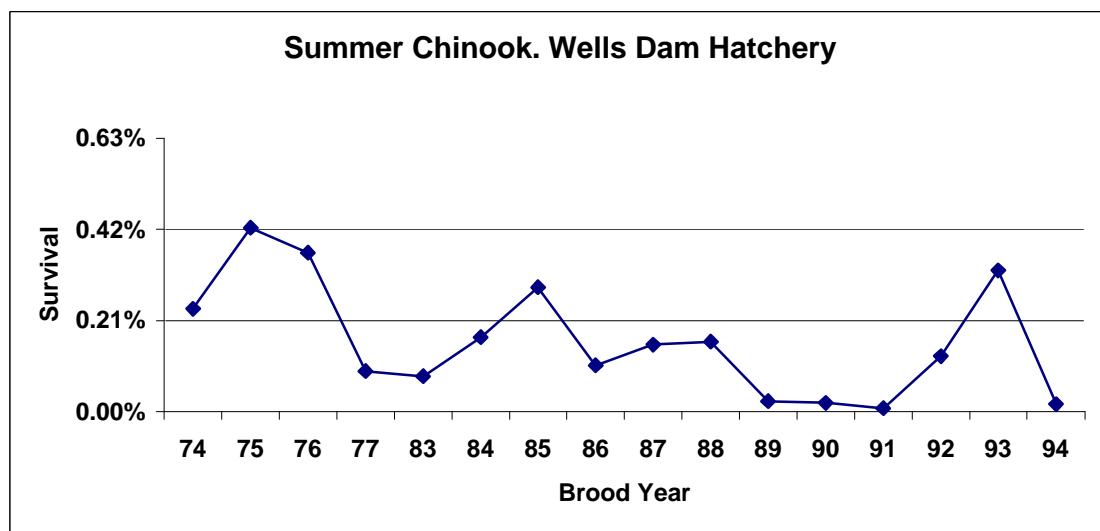
Figure 33. Survival Rates for Wells Summer Chinook.

Table 18. Recovery Disposition for Wells Dam Hatchery Salmonids.

Wells Dam Hatchery	Summer Chinook BY 1989-1994	
Disposition of Recovery	Tag Rec	Percent
Alaska	595	31.46%
Canada	63	3.33%
Oregon	35	1.85%
California	2	0.11%
Wa. Coastal Sport	0	0.00%
Columbia Estuary Sport	2	0.11%
Lower Columbia Sport	12	0.63%
Terminal Sport	0	0.00%
WA Commercial\Treaty Coastal	10	0.53%
Columbia Commercial\Treaty	14	0.74%
Hatchery Escapement	1156	61.13%
Spawning Ground Escapement	2	0.11%
Total Tags Recovered	1891	

SUMMARY

In 2000 all three objectives were met. Under objective one, at least one production group from every hatchery was coded-wire tagged. Under objective two, returning adults to each hatchery were surveyed for the absence of an adipose fin and the snouts from these fish were removed. Coded-wire tags were extracted from these snouts and the data will be sent to the PSMFC database in Portland, Oregon. For objective three survival and tag recovery rates were determined for coho salmon (1995-1997 broods) and chinook (1989-1994 broods).

Delays have developed in reporting retrieval data to the PSMFC's RMIS database. This data should be viewed as preliminary for the later brood years (i.e. 1997 for coho and 1994 for chinook) as expansion factors for tag recovery rates and survival may be subject to revision. Other reporting agencies also continue to have a backlog of data to report to the RMIS.

Fall Chinook released from WDFW hatcheries on the Columbia and Snake Rivers generally have been in a state of decline, in terms of survival since the mid-1980s (Appendix B). Survival for brood years was at its highest point since 1976 in 1984 for Tule fall chinook and 1983 for Upriver Brights. In the brood year span of 1991 to 1993 Upriver Bright fall chinook showed an increase in survival, rising from .10% to .64%, unfortunately the trend did not continue for BY 1994. Tule fall chinook also displayed an increase in survival during the same brood years, and followed the downward trend for BY 95. The increase in survival coincided with a decrease in the 1991-1992 El Nino warm water event in the Pacific Ocean. The data indicates that there is little difference in the trend of survival over the range of brood years between Tule and Upriver Bright fall chinook. However, Upriver Brights consistently survived at a higher rate than Tule fall chinook. Alaskan and Canadian fisheries combined accounted for twenty-five to fifty percent of coded-wire tag recoveries for Upriver Bright fall chinook at four of the five hatcheries that produced these fish in brood years 1989 to 1994. For Tule fall chinook hatchery escapement had the highest tag recovery rate in all hatcheries that produced them for the same brood years.

Survival for summer chinook dropped significantly after the 1989 brood year and remained low through the 1993. BY1994 shows an increased survival rate of .33%, due to the high survival rate of Similkameen summer run (Appendix B). Summer chinook did not show the same increase in survival for brood years 1991 through 1993 as fall chinook, and remained virtually unchanged. For the BY 1994, summer chinook were the only run to show an increase in survival rates. Spawning ground escapement had the highest recovery rate for all release facilities except Wells Dam hatchery for brood years 1989 to 1994.

Spring Chinook survival has declined in similar fashion to fall chinook mentioned above. However, spring chinook failed to show a rebound in survival from 1991 to 1994 (Appendix B). Brood year 1983 spring chinook had the highest survival rate since 1980.

This survival rate declined to a low of 0.07% for brood year 1991 and remained low through 1994. In all but one of the hatcheries that released spring chinook for brood years 1989 to 1994, coded-wire tag recovery was most common at hatchery escapement. Restrictions in both sport angling and net fisheries in the early to mid-1990s probably influenced this trend.

Survival for coho, as with all salmonids in this report, has been low since 1989. In the 1989 brood year both Type S and Type N displayed a drop in survival not unlike those observed for brood years in the 1980's (Appendix B). However, the subsequent rebounds that occurred during the 1980's did not occur during the 1990's. Both Type N and Type S coho have had low survival rates through brood year 1996. Survival rates for brood year 1997 do reflect an increase. Generally Type S coho has had a slightly higher survival since the 1990's. During the 1980's the opposite was true as Type N coho had higher survival rates for most brood years. Hatchery escapement accounted for the majority of tag recoveries at most hatcheries that released coho for brood years 1995 to 1997. There was a difference in tag recovery rates from fisheries between the two types of coho. As might be expected, Type N coho coded-wire tags were intercepted in the Washington coastal sport fisheries at a much higher rate than Type S coho. The later returning Type N coho, however, were also taken at a higher rate in the Columbia River commercial/ tribal fisheries as indicated by tag recoveries. Hatchery escapement recoveries were generally higher for Type S. Protection of chinook runs that coincide with early coho runs probably allowed for higher escapement. Natural spawn estimates of coho are currently unavailable, thus the actual CWT recoveries cannot be expanded.

The Missing Production Group Coded-wire tag program continues to be an effective tool for monitoring survival, relative contributions to fisheries and to stray rates to spawning grounds. Coded-wire tagging of these groups has also proved useful in applications other than basic fishery management. Finally its important to mention the importance of continued BPA funding for all aspects of the CWT program, including tagging (Missing Production Group Coded-wire Tagging Program), recovery (Coded-wire Tag Recovery Program) and database maintenance (PSMFC Regional Mark Processing Center, Streamnet).

Appendix A. Coded-wire tag releases for 2000 by hatchery and brood year with release sites, release dates, number tagged and total released (Date format = yy/mm/dd).

2000 CWT Releases

Hatchery Total	Release Site		First/Last Release Dates	Tagged
COWLITZ SALMON HATCHERY				
<i>Fall Chinook</i>				
99	COWLITZ R	26.0002	00/06/07 00/06/20	196,806
				5,585,066
<i>Spring Chinook</i>				
98	COWLITZ R	26.0002	00/03/01 00/03/01	147,428
98	COWLITZ R	26.0002	00/03/01 00/03/02	48,873
98	COWLITZ R	26.0002	00/03/02 00/03/02	236,229
<i>Late (Type N) Coho</i>				
98	COWLITZ R	26.0002	00/04/19 00/04/19	286,221
98	COWLITZ R	26.0002	00/04/19 00/05/01	30,205
98	COWLITZ R	26.0002	00/05/ 00/05/	20,200
98	COWLITZ R	26.0002	00/05/01 00/05/01	178,228
98	LEWIS R	27.0168	00/05/ 00/05/	4,600
99	SWOFFORD PD (LEWI)		00/03/13 00/03/13	149,900
99	SWOFFORD PD (LEWI)		00/04/07 00/04/07	486,000
99	SWOFFORD PD (LEWI)		00/09/12 00/09/12	15,430
EastBank Complex				
DRYDEN POND				
<i>Summer Chinook</i>				
98	WENATCHEE R	45.0030	00/05/01 00/05/01	629,413
				649,612
CARLTON REARING POND				
<i>Summer Chinook</i>				
98	METHOW R	48.0002	00/05/02 00/05/02	202,544
				205,269
CHIWAWA HATCHERY				
<i>Spring Chinook</i>				
98	CHIWAWA R	45.0759	00/04/10 00/04/10	70,679
99	CHIWAWA R	45.0759	00/05/15 00/05/15	44,319
				75,906
				44,612
SIMILKAMEEN HATCHERY				
<i>Spring Chinook</i>				
98	SIMILKAMEEN R	490325	00/04/13 00/04/26	282,148
				293,064
ELOCHOMAN HATCHERY				
<i>Fall Chinook</i>				
99	COLUMBIA R - GENERAL		00/06/18 00/06/18	108,028
99	ELOCHOMAN R	25.0236	00/06/01 00/06/15	86,831
				108,028
				1,105,000

Fall (Type S) Coho

98	ELOCHOMAN R	25.0236	00/04/01	00/04/30	215,000
98	ELOCHOMAN R	25.0236	00/04/30	00/04/30	28,816
98	ELOCHOMAN R	25.0236	00/05/01	00/05/15	19,500
98	LEWIS R -NF	27.0168	00/04/04	00/05/15	73,833

Late (Type N) Coho

98	ELOCHOMAN R	25.0236	00/04/01	00/04/30	21,695
98	ELOCHOMAN R	25.0236	00/05/01	00/05/15	19,573
98	ELOCHOMAN R	25.0236	00/05/30	00/05/30	428,847

FALLERT CREEK HATCHERY***Fall Chinook***

99	KALAMA R	27.0002	00/06/01	00/06/14	1,829,932
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Spring Chinook

98	FALLERT CR	27.0017	00/03/01	00/03/31	234,785
98	FALLERT CR	27.0017	00/03/01	00/04/30	124,043

Fall (Type S) Coho

98	FALLERT CR	27.0017	00/04/04	00/04/21	14,552
98	FALLERT CR	27.0017	00/04/04	00/04/25	15,521

Spring Chinook

99	TUCANNON R	35.0009	00/03/20	00/04/26	127,939
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Fall (Type S) Coho

98	GRAYS R + WF GRAYS R		00/05/03	00/05/03	44,060
98	GRAYS R -WF	25.0131	00/05/03	00/05/03	104,503

KALAMA FALLS HATCHERY***Fall Chinook***

99	KALAMA R	27.0002	00/06/06	00/06/21	91,883
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Spring Chinook

98	GOBAR CR	27.0073	00/03/01	00/03/09	117,036
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Late (Type N) Coho

98	KALAMA R	27.0002	00/04/04	00/04/04	127,360
98	KALAMA R	27.0002	00/04/05	00/04/25	152,823
98	KALAMA R	27.0002	00/04/25	00/04/25	0

KLICKITAT HATCHERY***Fall Chinook***

99	KLICKITAT R	30.0002	00/05/15	00/05/22	1,300,372
99	KLICKITAT R	30.0002	00/06/12	00/06/16	383,405
99	KLICKITAT R	30.0002	00/07/05	00/07/08	936,500

Spring Chinook

98	KLICKITAT R	30.0002	00/03/01	00/03/10	38,520	230,000
98	KLICKITAT R	30.0002	00/03/20	00/03/31	48,961	332,000
99	KLICKITAT R	30.0002	00/05/02	00/05/03	128,843	130,000
99	KLICKITAT R	30.0002	00/08/09	00/08/09		30,026
99	KLICKITAT R	30.0002	00/08/17	00/08/17		30,816

Late (Type N) Coho

98	KLICKITAT R	30.0002	00/04/19	00/04/30		806,964
98	KLICKITAT R	30.0002	00/04/30	00/05/15	88,948	89,118
98	KLICKITAT R	30.0002	00/05/01	00/05/15		523,917

LEWIS RIVER HATCHERY***Spring Chinook***

98	LEWIS R -NF	27.0168	00/03/21	00/03/21	288,368	901,371
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Fall (Type S) Coho

98	LEWIS R -NF	27.0168	00/04/04	00/04/30		239,149
98	LEWIS R -NF	27.0168	00/04/04	00/05/15	74,532	75,103
98	LEWIS R -NF	27.0168	00/05/01	00/05/15		561,311

Late (Type N) Coho

97	CHELATCHIE-NF	270373	00/12/07	00/12/07		165
97	CHELATCHIE-NF	270373	00/12/11	00/12/11		120
97	CHELATCHIE-NF	270373	00/12/12	00/12/12		120
97	MUDGY FORK	CR26.1205	00/10/26	00/10/26		41
97	MUDGY FORK	CR26.1205	00/10/31	00/10/31		4
97	SWIFT RES (SKAM)		00/10/26	00/10/26		41
97	SWIFT RES (SKAM)		00/10/31	00/10/31		5
98	LEWIS R -NF	27.0168	00/04/04	00/04/30		639,845
98	LEWIS R -NF	27.0168	00/05/01	00/05/15		1,382,930
98	LEWIS R -NF	27.0168	00/05/15	00/05/15	44,227	1,442,227
99	LAKE MERWIN	(27)	00/04/20	00/04/20		78,638
99	LAKE MERWIN	(27)	00/05/02	00/05/02		80,208
99	LAKE MERWIN (COWL)		00/09/09	00/09/09	277,566	

LYONS FERRY HATCHERY***Fall Chinook***

98	SNAKE R-LOWR	33.0002	00/03/21	00/04/14	441,721	456,401
99	SNAKE R-LOWR	33.0002	00/04/26	00/04/26	188,125	196,643

METHOW HATCHERY***Spring Chinook***

98	CHEWUCH R	48.0728	00/04/19	00/04/19	412,612	435,670
98	TWISP R	48.0374	00/04/19	00/04/19	14,752	15,470

NORTH TOUTLE HATCHERY

Fall Chinook

99	GREEN R	26.0323	00/06/24	00/06/30	1,300,000
99	GREEN R	26.0323	00/07/01	00/07/15	282,517
99	GREEN R	26.0323	00/07/10	00/07/10	91,189

Fall (Type S) Coho

98	GREEN R	26.0323	00/04/01	00/04/30	29,649	821,606
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PRIEST RAPIDS HATCHERY

Fall Chinook

99	COLUMBIA R AT PRIEST		00/06/14	00/06/15	1,700,000
99	COLUMBIA R AT PRIEST		00/06/16	00/06/27	176,121

RINGOLD SPRINGS HATCHERY

Fall Chinook

99	COLUMBIA R - GENERAL		00/06/18	00/06/18	202,758	213,676
99	COLUMBIA R - GENERAL		00/06/19	00/06/19	207,620	3,223,221

Spring Chinook

98	COLUMBIA R - GENERAL		00/01/05	00/01/14	113,159	391,816
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TURTLE ROCK HATCHERY

Summer Chinook

98	COLUMBIA R - GENERAL		00/04/22	00/04/22	167,382
99	COL.R. @ TURTLE ROCK		00/07/05	00/07/05	312,441
99	COLUMBIA R - GENERAL		00/05/15	00/05/20	193,131
99	COLUMBIA R - GENERAL		00/07/05	00/07/05	371,523

WASHOUGAL HATCHERY

Fall Chinook

99	WASHOUGAL R 28.0159		00/06/19	00/06/19	2,812,306
99	WASHOUGAL R 28.0159		00/06/19	00/07/19	77,822
99	WASHOUGAL R 28.0159		00/07/19	00/07/19	508,555

Fall (Type S) Coho

98	KLICKITAT R 30.0002		00/03/27	00/03/30	1,586,651
98	KLICKITAT R 30.0002		00/03/30	00/03/30	29,914
98	WASHOUGAL R 28.0159		00/03/27	00/03/30	16,167
98	WASHOUGAL R 28.0159		00/04/28	00/04/28	76,863

Late (Type N) Coho

98	KLICKITAT R 30.0002		00/03/27	00/03/30	492,258
98	KLICKITAT R 30.0002		00/03/30	00/03/30	29,569
98	WASHOUGAL R 28.0159		00/03/27	00/03/30	4,972
98	WASHOUGAL R 28.0159		00/03/28	00/04/28	30,352
98	WASHOUGAL R 28.0159		00/04/28	00/04/28	497,099

WELLS HATCHERY

Summer Chinook

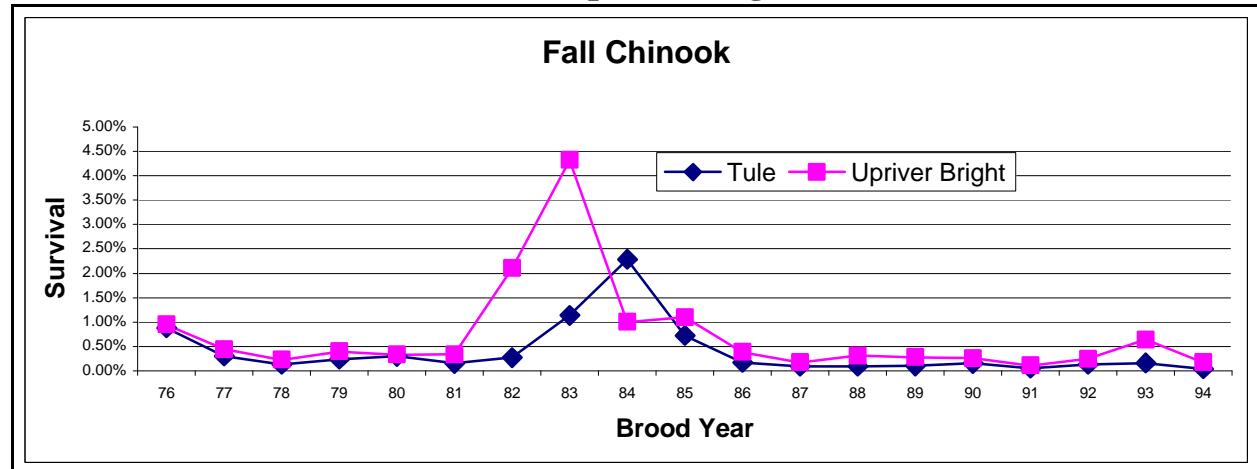
98	COLUMBIA NEAR WELLS	00/04/30	00/05/12	428,720	457,770
99	COLUMBIA R - GENERAL	00/06/19	00/06/19	340,755	363,600
99	LK CHELAN (CHEL)	00/09/12	00/09/12		93,370

Appendix B. Brood year 1971-1994 spring, summer, and fall chinook and brood year 1971-1997 Type N and Type S coho survival percentage and mean survival.

Survival Percentage and Mean Survival Tule Fall Chinook, Brood Years 1971-1994

Brood Year	Grays River	Elochoman	Cowlitz	N. Toutle	Fallert	Kalama	Washougal	Yearly Average
1971				4.65%	2.01%			3.33%
1972				0.48%	0.35%	0.64%		.49%
1973		0.96%		1.14%		1.64%	4.78%	2.13%
1974	12.54%					0.20%		6.37%
1975	1.99%					5.17%		3.58%
1976	0.11%	0.33%		0.86%		1.48%	1.61%	0.88%
1977	0.04%	0.10%	0.38%	0.70%	0.07%	0.43%	0.39%	0.30%
1978	0.07%	0.02%	0.31%	0.13%		0.09%	0.15%	0.13%
1979	0.22%	0.08%	0.26%		0.17%	0.33%	0.37%	0.24%
1980	0.21%	0.16%	0.43%		0.53%	0.18%	0.25%	0.29%
1981	0.05%	0.04%	0.20%		0.22%	0.19%	0.22%	0.15%
1982	0.35%		0.18%				0.28%	0.27%
1983			0.94%				1.32%	1.13%
1984	3.51%		1.99%				1.38%	2.29%
1985	1.09%	0.75%	0.23%				0.82%	0.72%
1986			0.15%				0.19%	0.17%
1987			0.05%	0.03%			0.21%	0.09%
1988	0.03%	0.06%	0.11%			0.17%		0.09%
1989	0.07%		0.09%	0.04%			0.19%	0.10%
1990	0.04%		0.18%	0.14%			0.23%	0.15%
1991	0.01%	0.05%	0.08%	0.02%			0.10%	0.05%
1992	0.02%	0.15%	0.12%	0.02%	0.13%	0.22%	0.28%	0.13%
1993	0.10%	0.20%	0.12%	0.19%	0.09%	0.17%	0.20%	0.15%
1994	0.04%	0.04%	0.02%	0.02%	0.05%	0.05%	0.05%	0.04%
Mean	1.14%	0.23%	0.32%	0.65%	0.40%	0.78%	0.69%	

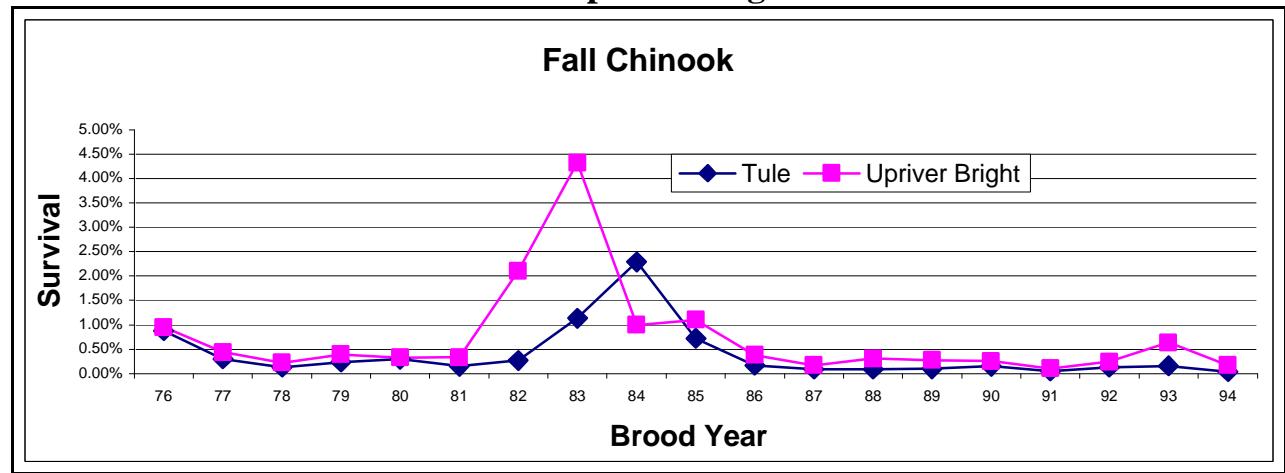
Mean Survival Rates for Tule and Upriver Bright Chinook.



Survival Percentage and Mean Survival Upriver Bright Fall Chinook, Brood Years 1971-1994

Brood Year	Klickitat	Lyons Ferry	Ringold Springs	Priest Rapids	Turtle Rock	Yearly Average
1971			3.50%			3.50%
1972						
1973						
1974						
1975	0.54%		2.21%	2.15%		1.63%
1976	1.06%			0.84%		0.95%
1977	0.37%		.77%	0.51%		0.44%
1978	0.11%			0.34%		0.22%
1979	0.17%			0.62%		0.39%
1980	0.05%			0.61%		0.33%
1981	0.05%			0.62%		0.33%
1982				1.60%	2.61%	2.10%
1983		7.34%		1.98%	3.65%	4.32%
1984		0.68%		1.74%	0.57%	1.00%
1985		0.91%		0.49%	1.90%	1.10%
1986	0.43%	0.77%		0.25%	0.07%	0.38%
1987		0.25%		0.05%	0.21%	0.17%
1988		0.49%		0.13%		0.31%
1989	0.06%	0.10%		0.30%	0.64%	0.27%
1990	0.19%	0.12%		0.61%	0.11%	0.26%
1991	0.02%	0.16%		0.03%	0.21%	0.10%
1992	0.12%	0.47%		0.08%	0.29%	0.24%
1993	0.33%	1.14%		0.73%	0.34%	0.64%
1994	0.09%	0.60%	0.01%	0.07%	0.07%	0.17%
Mean	0.25%	1.09%	1.62%	0.69%	0.89%	

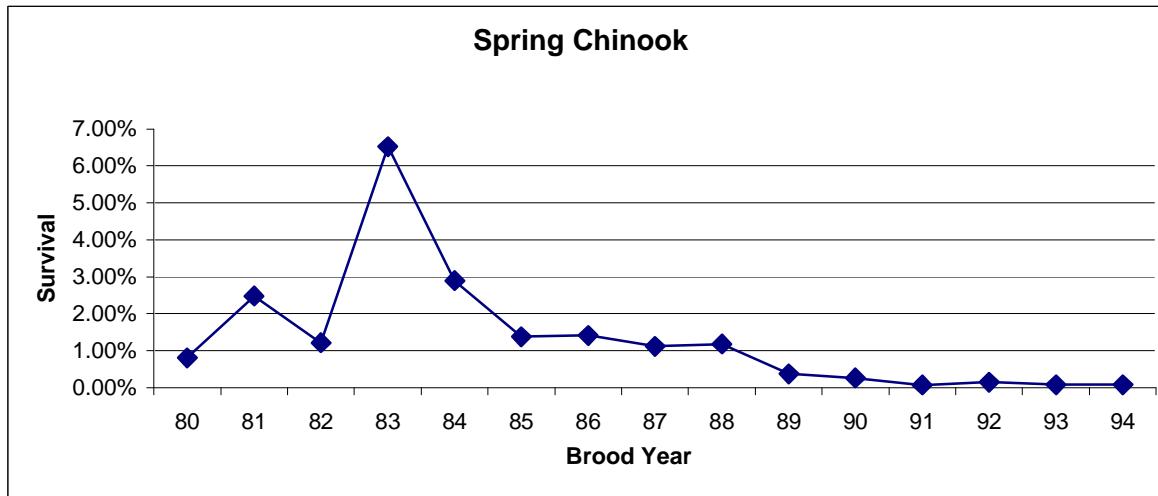
Mean Survival Rates for Tule and Upriver Bright Chinook.



Survival Percentage and Mean Survival Spring Chinook, Brood Years 1971-1994

Brood Year	Cowlitz	N. Toutle	Fallert	Lewis	Klickitat	Tucannon	Ringold Springs	Chiwawa	Methow	Yearly Average
1971	3.03%									3.03%
1972	0.68%						0.03%			.36%
1973					0.09%					.09%
1974	2.36%									2.36%
1975	6.35%				0.63%		1.62%			12.42%
1976	6.58%				0.28%					3.43%
1977	7.31%				0.67%		2.95%			3.64%
1978										
1979										
1980	0.80%									0.80%
1981	2.48%									2.48%
1982	1.21%									1.21%
1983	6.53%									6.53%
1984	2.89%									2.89%
1985	2.28%					0.47%				1.38%
1986	2.61%					0.22%				1.41%
1987	2.09%					0.15%				1.12%
1988	1.14%			2.04%		0.35%				1.18%
1989			0.36%	0.46%	0.29%	0.26%	0.41%	0.43%		0.37%
1990	0.37%		0.47%	0.64%	0.08%	0.03%	0.18%	0.04%		0.26%
1991	0.13%	0.06%	0.05%	0.03%	0.19%	0.04%	0.03%	0.06%		0.07%
1992	0.20%		0.05%	0.22%	0.29%	0.10%	0.20%	0.03%	0.08%	0.15%
1993	0.06%	0.04%	0.11%	0.10%	0.09%	0.11%	0.08%	0.05%	0.05%	0.08%
1994	0.11%		0.06%	0.22%	0.01%	0.03%	0.08%	0.07%	0.03%	0.08%
Mean	2.46%	0.05%	0.18%	0.53%	0.26%	0.18%	0.62%	0.11%	0.05%	

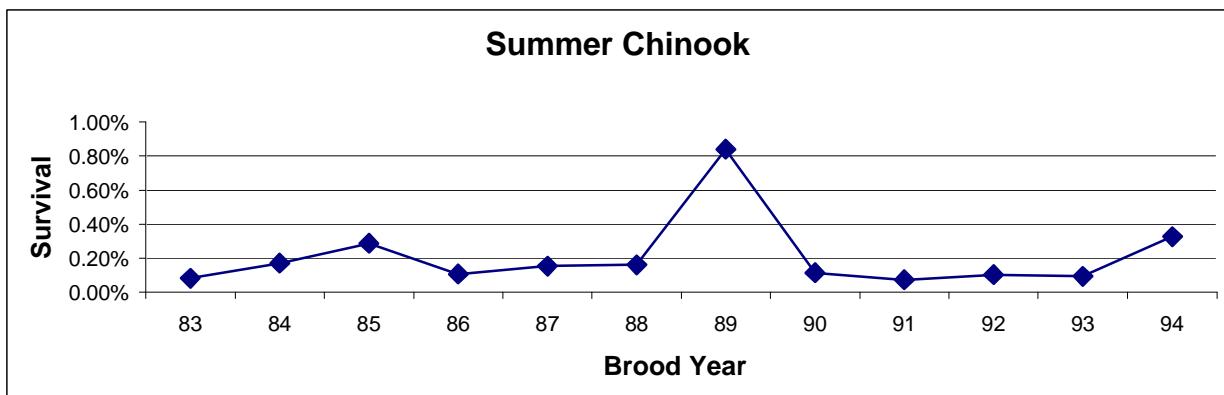
Mean Survival Rates for Spring Chinook



Survival Percentage and Mean Survival Summer Chinook, Brood Years 1971-1994

Brood Year	Eastbank	Eastbank	Eastbank	Wells	Methow	Yearly
	Carlton Pond	Dryden Pond	Similkameen Pond	Hatchery	Hatchery	Average
1971						
1972						
1973						
1974				0.24%		.24%
1975				0.42%		.42%
1976				0.37%		0.37%
1977				0.09%		0.09%
1978						
1979						
1980						
1981						
1982						
1983				0.08%		0.08%
1984				0.17%		0.17%
1985				0.29%		0.29%
1986				0.11%		0.11%
1987				0.15%		0.15%
1988				0.16%		0.16%
1989		0.50%	2.00%	0.02%		0.84%
1990	0.09%	0.09%	0.26%	0.02%		0.11%
1991		0.03%	0.24%	0.01%	0.02%	0.07%
1992	0.02%	0.04%	0.22%	0.13%		0.10%
1993	0.01%	0.02%	0.01%	0.33%		0.09%
1994	0.17%	0.41%	0.71%	0.02%		0.33%
Mean	0.07%	0.18%	0.57%	0.16%	0.02%	

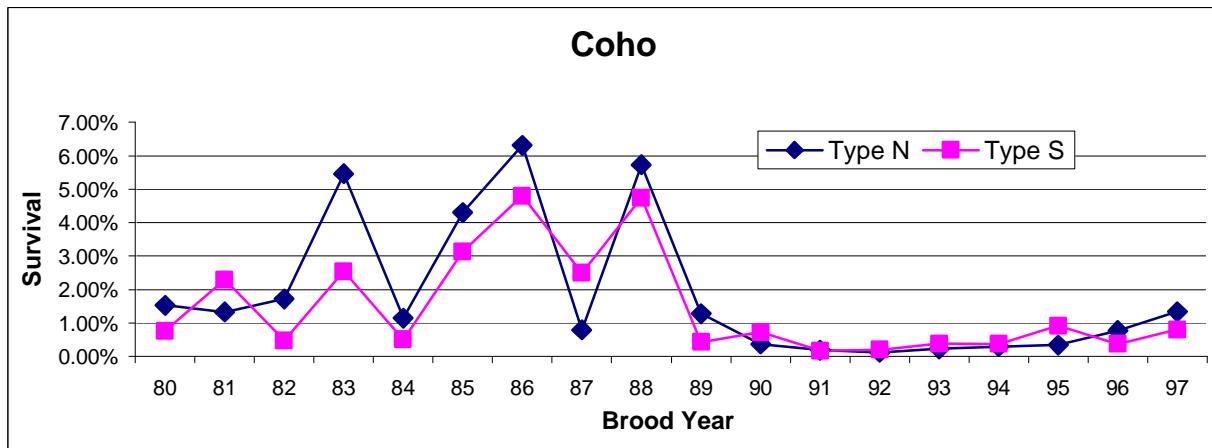
Mean Survival Rates for Summer Chinook.



Survival Percentage and Mean Survival Fall Coho (Type S) Brood Years 1971-1997

Brood Year	Grays River	Elochoman	N. Toutle	Fallert	Lewis	Yearly Average
1971						
1972		0.53%	2.59%			1.56%
1973						
1974	0.03%	1.72%				.86%
1975	2.26%					2.26%
1976	2.53%				2.22%	2.38%
1977	1.37%		4.20%			2.79%
1978	0.38%		1.31%			.85%
1979	2.20%					2.20%
1980	0.76%					0.76%
1981	2.30%					2.30%
1982	0.48%					0.48%
1983	2.54%					2.54%
1984	0.51%					0.51%
1985	3.14%					3.14%
1986			5.12%		4.49%	4.80%
1987			3.61%		1.38%	2.49%
1988	3.67%	3.45%	5.18%	5.92%	5.52%	4.75%
1989	0.13%	0.20%	0.55%	0.25%	1.02%	0.43%
1990	0.03%	0.48%	1.44%	0.94%		0.72%
1991	0.04%	0.03%	0.22%	0.26%	0.32%	0.17%
1992	0.03%	0.16%	0.08%	0.46%	0.26%	0.20%
1993	0.57%	0.06%	0.13%	0.31%	0.85%	0.39%
1994	0.50%	0.01%	0.42%	0.43%	0.49%	0.37%
1995		0.08%	1.83%	1.01%	0.74%	0.91%
1996	0.22%	0.44%	0.37%	0.34%	0.50%	0.37%
1997	1.98%	0.30%	0.82%	0.28%	0.66%	0.81%
Mean	1.22%	0.62%	1.86%	1.02%	1.54%	

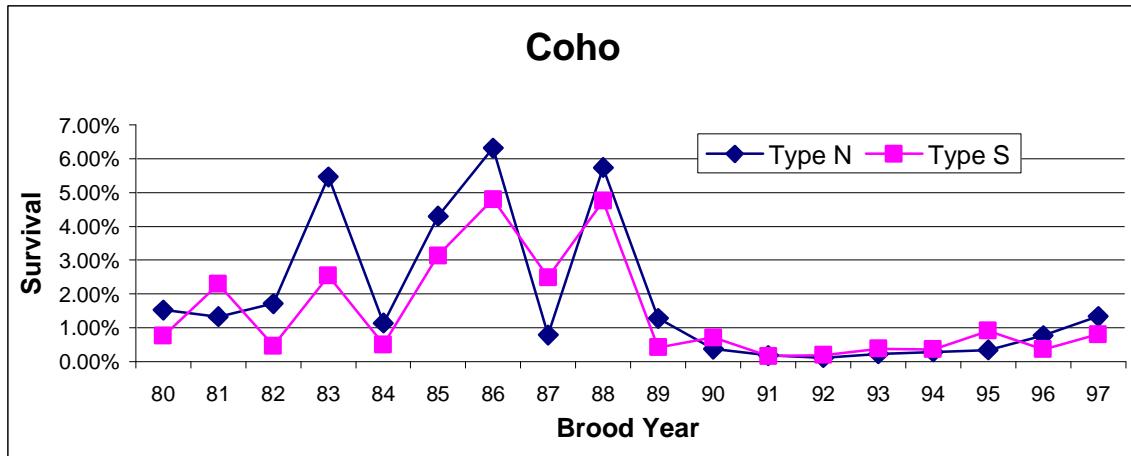
Mean Survival Rates for Early and Late Coho, (Type S and N).



Survival Percentage and Mean Survival Late Coho (Type N) Brood Years 1971-1997

Brood Year	Elochoman	Cowlitz	Kalama	Lewis	Washougal	Klickitat	Yearly Average
1971							
1972	1.54%	3.36%				3.21%	2.70%
1973							
1974	1.18%				0.99%	0.56%	.91%
1975						2.70%	2.70%
1976						1.39%	1.39%
1977					3.47%	2.50%	2.99%
1978					5.37%		5.37%
1979					4.53%		4.53%
1980		2.07%			0.99%		1.53%
1981		2.08%			0.57%		1.33%
1982		1.39%			2.05%		1.72%
1983	3.90%	5.50%	6.97%				5.46%
1984	0.66%	2.21%	1.15%			0.56%	1.15%
1985	4.62%	3.62%	6.74%			2.21%	4.30%
1986		4.30%		8.33%			6.31%
1987		0.79%					0.79%
1988	8.04%	4.59%	8.83%	6.65%	4.59%	1.69%	5.73%
1989	0.30%	1.18%	0.68%	1.74%	3.25%	0.55%	1.28%
1990	0.35%	0.65%	0.17%	0.77%	0.17%	0.13%	0.37%
1991	0.01%	0.17%	0.11%	0.59%	0.13%	0.13%	0.19%
1992	0.01%	0.24%	0.08%	0.20%		0.10%	0.13%
1993	0.04%	0.41%	0.19%	0.41%			0.23%
1994	0.02%	0.44%	0.07%	0.77%	0.41%	0.07%	0.30%
1995	0.36%		0.28%	0.58%	0.50%	0.01%	0.35%
1996	1.42%		0.83%	0.71%	0.88%	0.01%	0.77%
1997	2.47%	1.25%	1.44%	1.28%	1.54%	0.06%	1.34%
Mean	1.66%	2.01%	2.12%	2.00%	1.85%	0.99%	

Mean Survival Rates for Early and Late Coho, (Type S and N).



Appendix C. Detailed release information including dates of release, total released, number coded-wire tagged, coded-wire tags recovered (TT), survival, and release site by hatchery for brood year 1989 to 1994 Chinook and brood year 1995 to 1997 coho (BY = Brood Year). The exclamation mark (!) preceding a tag code is a flag identifying release groups without a CWT. Brood years that had no CWT releases are not included.

Cowlitz Salmon Hatchery Fall Chinook									
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site		BY
!04890001673	89/12/27	891227	194,000	0			COWLITZ R	26.0002	89
!04900000002	900104	900104	62,000	0			COWLITZ R	26.0002	89
!04900000003	900112	900112	660,000	0			COWLITZ R	26.0002	89
!04900000004	900129	900129	808,000	0			COWLITZ R	26.0002	89
!04900000005	900130	900130	415,000	0			COWLITZ R	26.0002	89
!04900000009	900329	900329	100,700	0			COWLITZ R	26.0002	89
!04900000010	900329	900329	103,000	0			COWLITZ R	26.0002	89
!04900000011	900329	900329	103,100	0			COWLITZ R	26.0002	89
!04900000012	900329	900329	147,700	0			COWLITZ R	26.0002	89
630452	900530	900621	6,706,700	189,406	166	0.09	COWLITZ R	26.0002	89
89 Totals			9,300,200	189,406	166	0.09			
634056	910610	910626	7,058,200	207,282	378	0.18	COWLITZ R	26.0002	90
!04900001532	901229	901229	179,000	0			COWLITZ R	26.0002	90
!04910000017	910215	910215	192,000	0			COWLITZ R	26.0002	90
!04910000018	910208	910208	1,172,000	0			COWLITZ R	26.0002	90
!04910000020	910202	910202	1,653,000	0			COWLITZ R	26.0002	90
!04910000024	910125	910125	367,000	0			COWLITZ R	26.0002	90
!04910000025	910122	910122	658,000	0			COWLITZ R	26.0002	90
!04910000031	910307	910307	6,000	0			COWLITZ R	26.0002	90
90 Totals			11,285,200	207,282	378	0.18			
634526	920529	920615	6,270,300	201,409	156	0.08	COWLITZ R	26.0002	91
91 Totals			6,270,300	201,409	156	0.08			
635015	930617	930622	4,152,100	194,073	229	0.12	COWLITZ R	26.0002	92
!04930002968	930604	930604	150,400	0			COWLITZ R	26.0002	92
92 Totals			4,302,500	194,073	229	0.12			
635539	940606	940620	4,419,900	199,353	245	0.12	COWLITZ R	26.0002	93
93 Totals			4,419,900	199,353	245	0.12			
635620	9505	9505	1,900,600	99,399	11	0.011	COWLITZ R	26.0002	94
635523	9506	9506	5,394,300	102,934	28	0.027	COWLITZ R	26.0002	94
94 Totals			7,294,900	202,333	39	0.019			

Cowlitz Salmon Hatchery		Spring Chinook							
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY	
635642	910405	910405	103,670	33,797	527	1.559	COWLITZ R	26.0002	89
635644	910405	910405	104,232	34,008	518	1.523	COWLITZ R	26.0002	89
635647	910405	910405	105,288	32,835	467	1.422	COWLITZ R	26.0002	89
635649	910405	910405	105,138	33,285	651	1.956	COWLITZ R	26.0002	89
635650	910405	910405	105,199	33,175	837	2.523	COWLITZ R	26.0002	89
635652	910405	910405	103,917	33,698	621	1.843	COWLITZ R	26.0002	89
635655	910405	910405	104,228	34,069	514	1.509	COWLITZ R	26.0002	89
635656	910405	910405	103,903	34,236	442	1.291	COWLITZ R	26.0002	89
635659	910405	910405	103,638	33,683	602	1.787	COWLITZ R	26.0002	89
!04890001408	891208	891208	550,000	0			COWLITZ R	26.0002	89
!04890001409	891130	891130	678,000	0			COWLITZ R	26.0002	89
!04890001413	891121	891121	970,000	0			COWLITZ R	26.0002	89
!04890001414	891122	891122	513,000	0			COWLITZ R	26.0002	89
630819	900516	900516	208,300	63,978	36	0.056	COWLITZ R	26.0002	89
631132	900618	900618	232,199	70,479	18	0.026	COWLITZ R	26.0002	89
631135	900705	900705	230,893	70,505	88	0.125	COWLITZ R	26.0002	89
631432	910405	910405	104,321	33,791	553	1.637	COWLITZ R	26.0002	89
631435	910405	910405	104,286	33,963	599	1.764	COWLITZ R	26.0002	89
631437	910405	910405	104,493	34,003	478	1.406	COWLITZ R	26.0002	89
Totals for 89			4,634,705	609,505	6,951	1.140			
634049	920401	920401	99,740	32,146	193	0.600	COWLITZ R	26.0002	90
634050	920401	920401	98,583	32,046	213	0.665	COWLITZ R	26.0002	90
634051	920401	920401	99,170	32,595	162	0.497	COWLITZ R	26.0002	90
634052	920401	920401	99,896	32,047	243	0.758	COWLITZ R	26.0002	90
634053	920401	920401	98,049	31,687	184	0.581	COWLITZ R	26.0002	90
634054	920401	920401	99,670	31,518	227	0.720	COWLITZ R	26.0002	90
634055	920401	920401	98,286	31,717	199	0.627	COWLITZ R	26.0002	90
!04900001523	901129	901129	63,000	0			COWLITZ R	26.0002	90
!04900001524	901127	901127	609,000	0			COWLITZ R	26.0002	90
!04900001533	901216	901216	192,000	0			COWLITZ R	26.0002	90
630861	910513	910513	269,854	87,885	12	0.014	COWLITZ R	26.0002	90
633930	910513	910513	202,892	60,235	7	0.012	COWLITZ R	26.0002	90
633931	910620	910620	222,686	69,150	1	0.001	COWLITZ R	26.0002	90
633932	910710	910710	221,600	71,344	23	0.032	COWLITZ R	26.0002	90
634044	920401	920401	98,490	31,525	196	0.622	COWLITZ R	26.0002	90
634045	920401	920401	99,378	32,529	217	0.667	COWLITZ R	26.0002	90
634046	920401	920401	99,745	32,678	197	0.603	COWLITZ R	26.0002	90
634047	920401	920401	99,479	32,372	223	0.689	COWLITZ R	26.0002	90
634048	920401	920401	99,871	32,243	175	0.543	COWLITZ R	26.0002	90
Totals for 90			2,971,389	673,717	2,472	0.367			

Cowlitz Salmon Hatchery Spring Chinook cont.

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site		BY
634420	920513	920513	222,254	73,789	11	0.015	COWLITZ R	26.0002	91
634423	920615	920615	223,580	74,235	6	0.008	COWLITZ R	26.0002	91
634424	920713	920713	225,221	74,774	13	0.017	COWLITZ R	26.0002	91
634429	920511	920511	124,508	41,090	6	0.015	COWLITZ R	26.0002	91
634552	930405	930405	96,769	31,391	76	0.242	COWLITZ R	26.0002	91
634553	930405	930405	97,238	31,608	44	0.139	COWLITZ R	26.0002	91
634554	930405	930405	97,297	31,339	65	0.207	COWLITZ R	26.0002	91
634555	930405	930405	97,415	31,714	46	0.145	COWLITZ R	26.0002	91
634556	930405	930405	96,943	31,845	110	0.345	COWLITZ R	26.0002	91
634557	930405	930405	97,293	31,743	58	0.183	COWLITZ R	26.0002	91
634558	930405	930405	97,502	31,581	51	0.161	COWLITZ R	26.0002	91
634559	930405	930405	98,266	31,792	83	0.261	COWLITZ R	26.0002	91
634560	930405	930405	97,213	31,369	74	0.236	COWLITZ R	26.0002	91
634561	930405	930405	97,624	31,453	63	0.200	COWLITZ R	26.0002	91
634562	930405	930405	98,347	30,693	44	0.143	COWLITZ R	26.0002	91
634563	930405	930405	94,780	28,587	49	0.171	COWLITZ R	26.0002	91
!04910000000	911210	911210	142,000	0			COWLITZ R	26.0002	91
!04910001592	911106	911106	76,000	0			COWLITZ R	26.0002	91
!04910001593	911110	911110	90,000	0			COWLITZ R	26.0002	91
!04910001594	911121	911121	47,000	0			COWLITZ R	26.0002	91
!04910001595	911123	911123	107,000	0			COWLITZ R	26.0002	91
!04910001597	911210	911210	141,000	0			COWLITZ R	26.0002	91
Totals for 91			2,565,250	639,003	799	0.125			
635234	940404	940404	90,100	50,185	99	0.197	COWLITZ R	26.0002	92
!04920001476	921109	921109	250,000	0			COWLITZ R	26.0002	92
!04920002861	921129	921129	113,000	0			COWLITZ R	26.0002	92
!04920002862	921123	921123	527,000	0			COWLITZ R	26.0002	92
!04930002811	930524	930524	200,200	0			COWLITZ R	26.0002	92
!04930003085	930618	930618	100,500	0			COWLITZ R	26.0002	92
!04930003086	930617	930617	103,800	0			COWLITZ R	26.0002	92
!04940005162	940404	940404	96,500	0			COWLITZ R	26.0002	92
!04940005163	940404	940404	90,600	0			COWLITZ R	26.0002	92
!04940005164	940404	940404	90,500	0			COWLITZ R	26.0002	92
!04940005165	940404	940404	96,200	0			COWLITZ R	26.0002	92
!04940005166	940404	940404	92,100	0			COWLITZ R	26.0002	92
!04940005167	940404	940404	92,700	0			COWLITZ R	26.0002	92
!04940005168	940404	940404	97,100	0			COWLITZ R	26.0002	92
!04940005169	940404	940404	97,600	0			COWLITZ R	26.0002	92
!04940005170	940404	940404	96,500	0			COWLITZ R	26.0002	92
!04940005171	940404	940404	97,300	0			WHITTLE CR	26.0225	92
!04940005172	940404	940404	96,900	0			COWLITZ R	26.0002	92
Totals for 92			2,428,600	50,185	99	0.197			

Cowlitz Spring Chinook								cont.	
Tag Code	First Release	Last Release	Released	Tagged	TT	Survival %		Release Site	BY
							%		
635146	940519	940705	640,900	187,097	158	0.084		COWLITZ R	26.0002
635434	950301	950301	90,500	20,278	1	0.005		COWLITZ R	26.0002
635435	950301	950301	89,700	19,233	5	0.026		COWLITZ R	26.0002
635436	950403	950403	87,800	19,446	22	0.113		COWLITZ R	26.0002
635553	950403	950403	88,900	19,779	15	0.076		COWLITZ R	26.0002
635554	950301	950301	90,200	19,829	4	0.020		COWLITZ R	26.0002
635557	950403	950403	89,200	19,467	19	0.098		COWLITZ R	26.0002
635558	950301	950301	90,000	19,957	7	0.035		COWLITZ R	26.0002
635560	950403	950403	88,600	19,322	5	0.026		COWLITZ R	26.0002
635563	950301	950301	90,200	20,265	5	0.025		COWLITZ R	26.0002
635603	950403	950403	89,200	19,902	19	0.095		COWLITZ R	26.0002
635605	950301	950301	91,600	20,047	4	0.020		COWLITZ R	26.0002
635606	950404	950404	89,000	20,511	12	0.059		COWLITZ R	26.0002
!04950001895	950331	950331	2,500	0				TILTON R	26.0560
!04950001900	950301	950301	90,600	0				COWLITZ R	26.0002
!04950001901	950301	950301	90,700	0				COWLITZ R	26.0002
!04950001906	950403	950403	88,100	0				COWLITZ R	26.0002
!04950001912	950403	950403	82,600	0				COWLITZ R	26.0002
Totals For 93			2,070,300	425,133	276	0.065			
635750	9604	9604	88,901	18,990	22	0.116		COWLITZ R	26.0002
635520	9505	9505	101,842	98,703	2	0.002		COWLITZ R	26.0002
635749	9604	9604	87,454	19,317	34	0.176		COWLITZ R	26.0002
635751	9603	9603	88,280	19,467	19	0.098		COWLITZ R	26.0002
635752	9603	9603	91,980	19,871	33	0.166		COWLITZ R	26.0002
635753	9604	9604	90,376	19,175	53	0.276		COWLITZ R	26.0002
635813	9604	9604	90,510	19,779	37	0.187		COWLITZ R	26.0002
635755	9603	9603	90,960	19,427	24	0.124		COWLITZ R	26.0002
635756	9604	9604	90,624	19,978	42	0.210		COWLITZ R	26.0002
635757	9603	9603	91,600	19,856	36	0.181		COWLITZ R	26.0002
635814	9603	9603	91,560	20,514	14	0.068		COWLITZ R	26.0002
635812	9604	9604	90,917	20,183	18	0.089		COWLITZ R	26.0002
635754	9603	9603	91,800	20,328	40	0.197		COWLITZ R	26.0002
!04960006443	960305	960305	79,340	0				COWLITZ R	26.0002
!04960006447	960306	960306	77,290	0				COWLITZ R	26.0002
!04960006448	960306	960306	76,440	0				COWLITZ R	26.0002
!04960006449	960306	960306	38,590	0				COWLITZ R	26.0002
Totals for 94			1,458,464	335,588	374	0.111			

Cowlitz Salmon Hatchery				Late (Type N) Coho				
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!0495000354	950907	950907	104,900	0			RIFFE LAKE (26)	94
!0495000354	950927	950927	161,500	0			RIFFE LAKE (26)	94
635730	960501	960520	3,474,727	38,970	115	0.30	COWLITZ R 26.0002	94
635731	960603	960603	994,100	38,014	220	0.58	COWLITZ R 26.0002	94
Totals for 94			4,468,827	76,984	335	0.44		
630206	9905	9905	10,000	9,729	92	0.946	COWLITZ R 26.0002	97
630209	9905	9905	10,000	9,443	112	1.186	COWLITZ R 26.0002	97
630853	990519	90519	10,000	9,748	140	1.436	COWLITZ R 26.0002	97
630851	9905	9905	10,000	9,880	151	1.528	COWLITZ R 26.0002	97
630848	990519	990519	10,000	10,000	112	1.120	COWLITZ R 26.0002	97
630846	9905	9905	10,000	9,913	125	1.261	COWLITZ R 26.0002	97
630845	9905	9905	10,000	9,926	113	1.138	COWLITZ R 26.0002	97
630207	9905	9905	10,000	9,075	134	1.477	COWLITZ R 26.0002	97
630208	990519	990519	10,000	9,714	117	1.204	COWLITZ R 26.0002	97
!04990015736	990519	990519	274,923	0			COWLITZ R 26.0002	97
!04980011794	980223	980223	149,000	0			RIFFE LAKE (26)	97
!04980011795	980226	980226	312,000	0			RIFFE LAKE (26)	97
!04980011836	980401	980401	350,000	0			RIFFE LAKE (26)	97
!04980014888	980903	980903	50,000	0			RIFFE LAKE (26)	97
!04990015825	990405	990405	241,100	0			COWLITZ R 26.0002	97
!04990015824	990405	990405	242,800	0			COWLITZ R 26.0002	97
!04990015823	990405	990405	244,000	0			COWLITZ R 26.0002	97
!04980013148	980706	980706	65,500	0			RIFFE LAKE (26)	97
!04980014614	980821	980821	160,600	0			RIFFE LAKE (26)	97
!04980014887	980903	980903	70,000	0			RIFFE LAKE (26)	97
!04990015737	990519	990519	233,786	0			COWLITZ R 26.0002	97
!04980011796	980324	980324	64,000	0			RIFFE LAKE (26)	97
!04990015735	990519	990519	283,253	0			COWLITZ R 26.0002	97
!04990015734	990519	990519	229,645	0			COWLITZ R 26.0002	97
!04990015733	990519	990519	287,951	0			COWLITZ R 26.0002	97
!04990015732	990519	990519	249,330	0			COWLITZ R 26.0002	97
!04990015731	990519	990519	299,046	0			COWLITZ R 26.0002	97
!04990015730	990519	990519	272,059	0			COWLITZ R 26.0002	97
!04990015720	990518	990518	243,921	0			COWLITZ R 26.0002	97
!04990015719	990518	990518	260,749	0			COWLITZ R 26.0002	97
!04990015718	990518	990518	240,219	0			COWLITZ R 26.0002	97
!04980014891	980924	980924	30,000	0			RIFFE LAKE (26)	97
!04980014890	980917	980917	24,500	0			RIFFE LAKE (26)	97
!04980014889	980917	980917	39,900	0			RIFFE LAKE (26)	97
!04990015738	990519	990519	273,939	0			COWLITZ R 26.0002	97
!04980012152	980609	980609	100,200	0			RIFFE LAKE (26)	97
Totals for 97			6,777,991	87,428	1,096	1.254		

Eastbank Complex		Similkameen Pond Summer Chinook						
Tag Code	YY/MM/DD First Release	YY/MM/ DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
630759	910521	910521	203,795	116,821	2,841	2.43	SIMILKAMEEN R 490325	89
635613	910521	910521	148,805	85,304	1,202	1.41	SIMILKAMEEN R 490325	89
Totals for 89			352,600	202,125	4,043	2.00		
634417	920401	920519	540,000	367,207	941	0.26	SIMILKAMEEN R 490325	90
Totals for 90			540,000	367,207	941	0.26		
634604	930409	930409	675,500	360,380	848	0.24	SIMILKAMEEN R 490325	91
Totals for 91			675,500	360,380	848	0.24		
635148	940407	940407	128,773	124,751	11	0.01	SIMILKAMEEN R 490325	92
635154	940407	940407	136,508	133,923	456	0.34	SIMILKAMEEN R 490325	92
635155	940407	940407	134,084	132,213	407	0.31	SIMILKAMEEN R 490325	92
635156	940407	940407	17,210	16,729	15	0.09	SIMILKAMEEN R 490325	92
635315	940407	940407	130,607	129,574	318	0.25	SIMILKAMEEN R 490325	92
Totals for 92			547,182	537,190	1,207	0.22		
!04950000301	950401	950402	202,139	0			SIMILKAMEEN R 490325	93
635706	950401	950402	181,711	180,115	22	0.01	SIMILKAMEEN R 490325	93
635708	950401	950402	202,150	191,059	32	0.02	SIMILKAMEEN R 490325	93
Totals for 93			586,000	371,174	54	0.01		
635762	9604	9604	221,883	212,446	1,509	0.71	SIMILKAMEEN R 490325	94
!04960006850	960423	960423	306,660	0			SIMILKAMEEN R 490325	94
!04960006851	960423	960423	7,756	0			SIMILKAMEEN R 490325	94
Totals for 94			536,299	212,446	1,509	0.71		

Eastbank Complex		Chiwawa Hatchery Spring Chinook						
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
631156	910519	910519	42,999	42,707	185	0.433	CHIWAWA R 45.0759	89
Totals for 89			42,999	42,707	185	0.433		
634319	920505	920505	3,333	3,310	0		CHIWAWA R 45.0759	90
634014	920505	920505	49,837	49,488	19	0.038	CHIWAWA R 45.0759	90
Totals for 90			53,170	52,798	19	0.036		
634335	930428	930428	1,144	1,124	0		CHIWAWA R 45.0759	91
634646	930428	930428	20,002	19,677	14	0.071	CHIWAWA R 45.0759	91
635952	930428	930428	40,992	40,287	21	0.052	CHIWAWA R 45.0759	91
Totals for 91			62,138	61,088	35	0.057		
634748	940426	940426	41,893	40,766	27	0.066	CHIWAWA R 45.0759	92
634751	940426	940426	43,220	42,210	1	0.002	CHIWAWA R 45.0759	92
Totals for 92			85,113	82,976	28	0.034		

635326	950414	950426	112,368	110,963	56	0.050	CHIWAWA R	45.0759	93
635327	950414	950426	111,242	110,242	46	0.042	CHIWAWA R	45.0759	93
Totals for 93			223,610	221,205	102	0.046			
635352	9604	9605	27,226	26,832	20	0.075	CHIWAWA R	45.0759	94
Totals for 94			27,226	26,832	20	0.075			

Eastbank Complex			Dryden Pond			Summer Chinook			
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY	
631119	910419	910524	720,000	144,905	721	0.50	WENATCHEE R	45.0030	89
Total for 89			720,000	144,905	721	0.50			
634337	920415	920522	124,440	119,214	112	0.09	WENATCHEE R	45.0030	90
Totals for 90			124,440	119,214	112	0.09			
634215	930525	930525	96,307	95,527	28	0.03	WENATCHEE R	45.0030	91
634613	930525	930525	94,872	94,844	24	0.03	WENATCHEE R	45.0030	91
Totals for 91			191,179	190,371	52	0.03			
635020	940430	940524	160,935	154,550	100	0.06	WENATCHEE R	45.0030	92
635147	940430	940524	157,592	152,651	44	0.03	WENATCHEE R	45.0030	92
635149	940430	940524	156,550	151,641	36	0.02	WENATCHEE R	45.0030	92
635150	940430	940524	152,254	146,213	88	0.06	WENATCHEE R	45.0030	92
Totals for 92			627,331	605,055	268	0.04			
635707	950415	950517	213,169	209,347	50	0.02	WENATCHEE R	45.0030	93
!04950007521	950415	950430	239,313	0			WENATCHEE R	45.0030	93
!04950007522	950501	950517	447,947	0			WENATCHEE R	45.0030	93
Totals for 93			900,429	209,347	50	0.02			
635840	9604	9606	226,108	223,334	474	0.21	WENATCHEE R	45.0030	94
635839	9604	9606	232,950	222,562	1,336	0.60	WENATCHEE R	45.0030	94
!04960005298	960418	960430	6938	0			WENATCHEE R	45.0030	94
!04960005301	960501	960531	306661	0			WENATCHEE R	45.0030	94
!04960006309	960601	960604	24693	0			WENATCHEE R	45.0030	94
Totals for 94			797,350	445,896	1,810	0.41			

Eastbank Complex			Carlton Pond			Summer Chinook			
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY	
634418	920508	920508	391,650	371,483	325	0.09	METHOW R	48.0002	90
Totals for 90			391,650	371,483	325	0.09			
634943	940422	940422	104,846	102,241	13	0.01	METHOW R	48.0002	92
634945	940422	940422	89,475	87,252	21	0.02	METHOW R	48.0002	92
635030	940422	940422	102,126	99,588	11	0.01	METHOW R	48.0002	92
635033	940422	940422	106,194	103,555	16	0.02	METHOW R	48.0002	92
Totals for 92			402,641	392,636	61	0.02			

635709	950424	950511	202,386	198,119	26	0.01	METHOW R	48.0002	93
!04950001681	950424	950430	33,851	0			METHOW R	48.0002	93
!04950001683	950501	950511	197,138	0			METHOW R	48.0002	93
Totals for 93			433,375	198,119	26	0.01			
635761	9604	9604	202,304	195,628	232	0.12	METHOW R	48.0002	94
635760	9604	9604	204,256	192,342	433	0.23	METHOW R	48.0002	94
Totals for 94			406,560	387,970	665	0.17			

Elochoman Hatchery				Fall Chinook					
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Total Released	Tagged	TT	Survival %	Release Site	BY	
634534	920615	920615	1,263,900	29,862	15	0.05	ELOCHOMAN R	25.0236	91
634624	920601	920601	2,712,100	59,573	29	0.05	ELOCHOMAN R	25.0236	91
Totals for 91			3,976,000	89,435	44	0.05			
635036	930613	930613	3,570,100	90,921	125	0.14	ELOCHOMAN R	25.0236	92
635039	930629	930629	1,035,100	91,601	142	0.16	ELOCHOMAN R	25.0236	92
Totals for 92			4,605,200	182,522	267	0.15			
635051	940604	940622	536,000	89,880	201	0.22	ELOCHOMAN R	25.0236	93
635053	940705	940705	640,000	83,984	154	0.18	ELOCHOMAN R	25.0236	93
Totals for 93			1,176,000	173,864	355	0.20			
635724	9506	9506	993,900	44,240	21	0.05	ELOCHOMAN R	25.0236	94
635723	9505	9506	3,244,800	74,176	26	0.04	ELOCHOMAN R	25.0236	94
!04950003198	950705	950705	107000	0			ELOCHOMAN R	25.0236	94
!04950003199	950705	950705	107100	0			ELOCHOMAN R	25.0236	94
Totals for 94			4,452,800	118,416	47	0.04			

Elochoman Hatchery				Early (Type S) Coho					
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY	
!0497000766	970310	970310	230,872	0			KLICKITAT R	30.0002	95
636237	970310	970310	29,017	28,669	23	0.08	KLICKITAT R	30.0002	95
Totals for 95			259,889	28,669	23	0.08			
!0498001441	980403	980403	282,909	0			ELOCHOMAN R	25.0236	96
!0498001441	980403	980403	163,711	0			ELOCHOMAN R	25.0236	96
630536	980403	980403	30,216	30,216	132	0.44	ELOCHOMAN R	25.0236	96
Totals for 96			476,836	30,216	132	0.44			
!04990016078	990404	990415	25,500	0	0		ELOCHOMAN R	25.0236	97
!04990016077	990404	990415	283,211	0	0		ELOCHOMAN R	25.0236	97
630834	9904	9904	30,189	28,946	87	0.30	ELOCHOMAN R	25.0236	97
Totals for 97			338,900	28,946	87	0.30			

Elochoman Hatchery

Late (Type N) Coho

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!0497000927	970414	970430	120,621	0			ELOCHOMAN R	25.0236
!0497000963	970512	970512	69,506	0			ELOCHOMAN R	25.0236
635930	970414	970512	30,809	30,690	85	0.277	ELOCHOMAN R	25.0236
636236	970414	970512	29,882	29,822	133	0.446	ELOCHOMAN R	25.0236
Totals for 95			250,818	60,512	218	0.360		
!0498001441	980501	980511	459,607	0			ELOCHOMAN R	25.0236
!0498001441	980415	980430	459,608	0			ELOCHOMAN R	25.0236
630537	980415	980511	30,365	30,365	207	0.682	ELOCHOMAN R	25.0236
636246	980415	980511	14,515	14,440	430	2.978	ELOCHOMAN R	25.0236
Totals for 96			964,095	44,805	637	1.422		
!04990016087	990501	990531	72,380	0	0		ELOCHOMAN R	25.0236
!04990016082	990416	990430	220,816	0	0		ELOCHOMAN R	25.0236
630202	9904	9906	16,939	16,655	474	2.846	ELOCHOMAN R	25.0236
630836	9904	9904	17,380	16,484	401	2.433	ELOCHOMAN R	25.0236
630833	9904	9905	23,076	18,567	404	2.176	ELOCHOMAN R	25.0236
Totals for 97			350,591	51,706	1,279	2.474		

Fallert Creek Hatchery

Fall Chinook

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!04930002250	930402	930402	118,200	0			GOBAR CR	27.0073
!04930002251	930402	930402	120,500	0			GOBAR CR	27.0073
!04930002252	930402	930402	85,800	0			GOBAR CR	27.0073
!04930002253	930402	930402	86,400	0			GOBAR CR	27.0073
!04930002254	930402	930402	85,800	0			GOBAR CR	27.0073
!04930002958	930603	930603	1,003,700	0			GOBAR CR	27.0073
634936	930616	930616	1,038,100	91,005	117	0.129	GOBAR CR	27.0073
Totals for 92			2,538,500	91,005	117	0.129		
!04940005990	940602	940602	987,300	0			KALAMA R	27.0002
635160	940627	940627	1,310,000	91,323	83	0.091	KALAMA R	27.0002
Totals for 93			2,297,300	91,323	83	0.091		
635203	9505	9506	2,164,800	87,344	42	0.048	FALLERT CR	27.0017
Totals for 94			2,164,800	87,344				

Fallert Creek Hatchery Early (Type S) Coho

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!0497000803	970409	970423	460,646	0			FALLERT CR	27.0017
636242	970409	970423	28,984	27,551	277	1.005	FALLERT CR	27.0017
Totals for 95			489,630	27,551	277	1.005		
!0498001290	980401	980419	387,109	0			FALLERT CR	27.0017
!0498001290	980401	980419	130,165	0			FALLERT CR	27.0017
630539	980401	980419	28,586	28,175	95	0.337	FALLERT CR	27.0017
Totals for 96			545,860	28,175	95	0.337	FALLERT CR	27.0017
!04980011117	980208	980208	57,900	0	0		FALLERT CR	27.0017
!04980011118	980208	980208	19,300	0	0		FALLERT CR	27.0017
!04990017469	990402	990419	29,955	0	0		FALLERT CR	27.0017
!04990017470	990402	990419	381,425	0	0		FALLERT CR	27.0017
630839	9904	9904	29,955	28,176	78	0.277	FALLERT CR	27.0017
Totals for 97			518,535	28,176	78	0.277		

Fallert Creek Hatchery Spring Chinook

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
635535	910414	910414	546,892	110,045	399	0.363	FALLERT CR	27.0017
Totals for 89			546,892	110,045	399	0.363		
634136	920325	920325	281,800	108,221	504	0.466	FALLERT CR	27.0017
Totals for 90			281,800	108,221	504	0.466		
634612	930405	930405	525,800	103,105	48	0.047	GOBAR CR	27.0073
Totals for 91			525,800	103,105	48	0.047		
634723	940403	940403	572,100	110,226	55	0.050	FALLERT CR	27.0017
Totals for 92			572,100	110,226	55	0.050		
635029	950403	950403	542,500	105,751	117	0.111	FALLERT CR	27.0017
Totals for 93			542,500	105,751	117	0.111		
635328	9603	9603	436,600	110,431	65	0.059	FALLERT CR	27.0017
Totals for 94			436,600	110,431	65	0.059		

Grays River Hatchery Fall Chinook

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!04900000075	900312	900312	162,800	0			GRAYS R -WF	25.0131
!04900000082	900514	900514	406,700	0			GRAYS R -WF	25.0131
635537	900622	900622	246,600	89,019	99	0.111	GRAYS R -WF	25.0131
635538	900605	900605	385,000	89,758	28	0.031	GRAYS R -WF	25.0131
635541	900618	900618	192,500	87,927	66	0.075	GRAYS R -WF	25.0131
Totals for 89			1,393,600	266,704	193	0.072		

Grays River Hatchery		Fall Chinook					cont	
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!04910000236	910429	910429	421,100	0			GRAYS R -WF 25.0131	90
!04910001170	910607	910607	295,400	0			GRAYS R -WF 25.0131	90
!04910001451	910930	910930	72,600	0			GRAYS R -WF 25.0131	90
634218	910607	910607	89,900	86,843	24	0.028	GRAYS R -WF 25.0131	90
634220	910621	910621	167,000	89,430	29	0.032	GRAYS R -WF 25.0131	90
635911	910701	910701	240,600	86,320	53	0.061	GRAYS R -WF 25.0131	90
Totals for 90			1,286,600	262,593	106	0.040		
!04920000454	920424	920424	293,500	0			GRAYS R -WF 25.0131	91
!04920000709	920406	920406	84,500	0			GRAYS R -WF 25.0131	91
!04920001477	920930	920930	74,100	0			GRAYS R -WF 25.0131	91
634227	920615	920615	248,200	87,242	2	0.002	GRAYS R -WF 25.0131	91
634229	920601	920601	382,500	90,132	1	0.001	GRAYS R -WF 25.0131	91
634615	920522	920522	182,800	89,290	18	0.020	GRAYS R -WF 25.0131	91
Totals for 91			1,265,600	266,664	21	0.008		
!04930002921	930525	930525	334,500	0			GRAYS R -WF 25.0131	92
634927	931015	931015	209,300	72,445	18	0.025	GRAYS R -WF 25.0131	92
634929	930614	930614	366,080	88,593	17	0.019	GRAYS R -WF 25.0131	92
634930	930614	930614	179,700	86,846	9	0.010	GRAYS R -WF 25.0131	92
634933	930709	930709	270,600	89,587	28	0.031	GRAYS R -WF 25.0131	92
Totals for 92			1,360,180	337,471	72	0.021		
635239	940928	940928	64,100	52,616	53	0.101	GRAYS R -WF 25.0131	93
Totals for 93			64,100	52,616	53	0.101		
635623	950929	950929	98,600	98,206	40	0.041	GRAYS R -WF 25.0131	94
Totals for 94			98,600	98,206				

Grays River Hatchery		Early (Type S) Coho						
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!0498001261	980422	980422	128,026	0			GRAYS R -WF 25.0131	96
636248	980422	980422	30,019	29,510	66	0.22	GRAYS R -WF 25.0131	96
Totals for 96			158,045	29,510	66	0.22		
!04990017514	990512	990512	63,339	0	0		GRAYS R -WF 25.0131	97
!04990017513	990512	990512	121,800	0	0		GRAYS R -WF 25.0131	97
630830	9905	9905	29,557	28,440	563	1.980	GRAYS R -WF 25.0131	97
Totals for 97			29,557	213,696	563	1.980		

<i>Kalama Falls Hatchery</i>				<i>Fall Chinook</i>					
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site		BY
!0493000224	930331	930331	152,300	0			KALAMA R	27.0002	92
!0493000225	930326	930326	174,300	0			KALAMA R	27.0002	92
!0493000295	930611	930611	283,400	0			KALAMA R	27.0002	92
!0493000295	930607	930607	277,300	0			KALAMA R	27.0002	92
!0493000295	930601	930601	277,000	0			KALAMA R	27.0002	92
!0493000295	930607	930607	277,300	0			KALAMA R	27.0002	92
!0493000295	930611	930611	230,400	0			KALAMA R	27.0002	92
634939	930602	930621	2,198,300	91,519	198	0.216	KALAMA R	27.0002	92
Totals for 92			3,870,300	91,519	198	0.216			
!0494000572	940531	940531	226,200	0			KALAMA R	27.0002	93
635054	940602	940628	3,059,700	92,630	158	0.171	KALAMA R	27.0002	93
Totals for 93			3,285,900	92,630	158	0.171			
635205	9506	9506	3,541,500	87,847	40	0.046	KALAMA R	27.0002	94
Totals for 94			3,541,500	87,847					

<i>Kalama Falls Hatchery</i>				<i>Late(Type N) Coho</i>					
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site		BY
!0497000849	970422	970422	137,410	0			KALAMA R	27.0002	95
636243	970415	970630	26,800	25,908	73	0.282	KALAMA +KLICKITAT R		95
Totals for 95			164,210	25,908	73	0.282			
!0498001288	980413	980413	169,127	0			KALAMA R	27.0002	96
!0498001289	980414	980414	169,127	0			KALAMA R	27.0002	96
!0498001289	980414	980414	169,127	0			KALAMA R	27.0002	96
!0498001289	980419	980419	169,127	0			KALAMA R	27.0002	96
!0498001289	980419	980419	141,772	0			KALAMA R	27.0002	96
!0498001289	980419	980419	113,021	0			KALAMA R	27.0002	96
!0498001290	980419	980419	55,912	0			KALAMA R	27.0002	96
630538	980413	980419	30,387	28,107	233	0.829	KALAMA R	27.0002	96
Totals for 96			1,017,600	28,107	233	0.829			
630840	9904	9904	30,354	29,766	430	1.445	KALAMA R	27.0002	97
!04990015673	990414	990414	164,368	0			KALAMA R	27.0002	97
!04990015671	990414	990414	81,693	0			KALAMA R	27.0002	97
!04990015670	990414	990414	90,144	0			KALAMA R	27.0002	97
!04990015668	990414	990414	74,100	0			KALAMA R	27.0002	97
!04990015664	990406	990406	166,040	0			KALAMA R	27.0002	97
!04980011557	980304	980304	30,000	0			KALAMA R	27.0002	97
!04990015661	990406	990406	84,241	0			KALAMA R	27.0002	97
!04990015663	990406	990406	79,900	0			KALAMA R	27.0002	97
!04980012769	980630	980630	142,700	0			KALAMA R	27.0002	97
!04990015666	990414	990414	150,200	0			KALAMA R	27.0002	97
!04980012770	980630	980630	89,700	0			KALAMA R	27.0002	97
Totals for 97			1,176,340	29,766	430	1.445			

Klickitat Hatchery

Fall Chinook

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
630416	900517	900517	2,949,700	155,470	83	0.053	KLICKITAT R 30.0002	89
631459	900607	900607	1,263,200	79,371	53	0.067	KLICKITAT R 30.0002	89
Totals for 89			4,212,900	234,841	136	0.058		
!0491000009	910225	910225	219,000	0			KLICKITAT R 30.0002	90
!0491000016	910215	910215	60,000	0			KLICKITAT R 30.0002	90
!0491000032	910314	910314	30,000	0			KLICKITAT R 30.0002	90
!0491000033	910308	910308	124,500	0			KLICKITAT R 30.0002	90
!0491000034	910312	910312	289,000	0			KLICKITAT R 30.0002	90
!0491000061	910401	910401	146,000	0			KLICKITAT R 30.0002	90
634030	910524	910524	2,630,000	75,342	161	0.214	KLICKITAT R 30.0002	90
634031	910619	910619	252,800	75,943	152	0.200	KLICKITAT R 30.0002	90
634032	910619	910619	1,432,000	76,067	108	0.142	KLICKITAT R 30.0002	90
Totals for 90			5,183,300	227,352	421	0.185		
!0492000051	920312	920312	81,000	0			KLICKITAT R 30.0002	91
!04920001085	920612	920612	473,200	0			KLICKITAT R 30.0002	91
!04920001086	920612	920612	659,000	0			KLICKITAT R 30.0002	91
!04920001087	920612	920612	21,100	0			KLICKITAT R 30.0002	91
!04920001091	920615	920615	66,600	0			KLICKITAT R 30.0002	91
!04920001095	920609	920609	10,500	0			KLICKITAT R 30.0002	91
!04920001096	920609	920609	780,000	0			KLICKITAT R 30.0002	91
634427	920609	920609	1,186,500	75,144	23	0.031	KLICKITAT R 30.0002	91
634530	920615	920615	203,800	75,888	11	0.014	KLICKITAT R 30.0002	91
634531	920612	920612	795,300	75,399	2	0.003	KLICKITAT R 30.0002	91
Totals for 91			4,277,000	226,431	36	0.016		
!04930001483	930126	930126	23,000	0			KLICKITAT R 30.0002	92
!04930002241	930318	930318	10,000	0			KLICKITAT R 30.0002	92
634736	930616	930616	1,580,000	76,341	108	0.141	KLICKITAT R 30.0002	92
634739	930625	930625	364,000	75,797	132	0.174	KLICKITAT R 30.0002	92
634924	930521	930521	2,208,000	72,255	24	0.033	KLICKITAT R 30.0002	92
Totals for 92			4,185,000	224,393	264	0.118		
!04940006005	940517	940517	825,400	0			KLICKITAT R 30.0002	93
635334	940517	940517	2,100,000	75,273	185	0.246	KLICKITAT R 30.0002	93
635335	940613	940613	243,000	76,204	230	0.302	KLICKITAT R 30.0002	93
635336	940610	940610	2,120,000	74,501	323	0.434	KLICKITAT R 30.0002	93
Totals for 93			5,288,400	225,978	738	0.327		
635518	9506	9506	1,540,800	98,718	72	0.073	KLICKITAT R 30.0002	94
635517	9505	9505	2,197,000	98,675	109	0.110	KLICKITAT R 30.0002	94
!04950001113	950602	950609	349,200	0	0		KLICKITAT R 30.0002	94
Totals for 94			4,087,000	197,393				

Klickitat Hatchery ***Spring Chinook***

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!04900000300	900628	900628	58,600	0			KLICKITAT R 30.0002	89
!04900000301	900628	900628	58,700	0			KLICKITAT R 30.0002	89
!04900000302	900629	900629	22,300	0			KLICKITAT R 30.0002	89
!04910000048	910301	910301	99,300	0			KLICKITAT R 30.0002	89
!04910000060	910401	910401	134,000	0			KLICKITAT R 30.0002	89
!04910000304	910501	910501	308,000	0			KLICKITAT R 30.0002	89
635552	910501	910501	19,800	19,681	61	0.310	KLICKITAT R 30.0002	89
635555	910501	910501	19,800	19,642	52	0.265	KLICKITAT R 30.0002	89
635556	910501	910501	19,800	19,483	67	0.344	KLICKITAT R 30.0002	89
635559	910501	910501	19,800	19,246	64	0.333	KLICKITAT R 30.0002	89
635561	910501	910501	19,800	19,522	66	0.338	KLICKITAT R 30.0002	89
635562	910501	910501	19,800	19,404	51	0.263	KLICKITAT R 30.0002	89
635601	910501	910501	19,800	19,604	62	0.316	KLICKITAT R 30.0002	89
635602	910501	910501	19,800	19,562	45	0.230	KLICKITAT R 30.0002	89
635604	910501	910501	19,800	19,681	66	0.335	KLICKITAT R 30.0002	89
635607	910501	910501	19,800	19,724	43	0.218	KLICKITAT R 30.0002	89
635608	910501	910501	19,800	19,760	48	0.243	KLICKITAT R 30.0002	89
635611	910501	910501	19,800	19,166	56	0.292	KLICKITAT R 30.0002	89
Totals for 89			918,500	234,475	681	0.290		
634312	920501	920501	19,400	18,430	8	0.043	KLICKITAT R 30.0002	90
634313	920501	920501	19,100	18,875	8	0.042	KLICKITAT R 30.0002	90
634314	920501	920501	19,300	19,192	22	0.115	KLICKITAT R 30.0002	90
634315	920501	920501	18,900	18,864	23	0.122	KLICKITAT R 30.0002	90
635922	920501	920501	19,300	18,277	10	0.055	KLICKITAT R 30.0002	90
635925	920501	920501	19,200	18,822	11	0.058	KLICKITAT R 30.0002	90
635926	920501	920501	19,300	19,273	18	0.093	KLICKITAT R 30.0002	90
635928	920501	920501	19,600	19,563	21	0.107	KLICKITAT R 30.0002	90
635931	920501	920501	18,899	18,864	11	0.058	KLICKITAT R 30.0002	90
635932	920501	920501	19,300	19,263	13	0.067	KLICKITAT R 30.0002	90
635935	920501	920501	19,300	19,263	13	0.067	KLICKITAT R 30.0002	90
635937	920501	920501	19,800	19,800	24	0.121	KLICKITAT R 30.0002	90
Totals for 90			310,799	228,486	182	0.080		
!04910001499	911230	911230	9,000	0			KLICKITAT R 30.0002	91
!04910001500	911209	911209	52,000	0			KLICKITAT R 30.0002	91
!04920001372	920716	920716	98,000	0			KLICKITAT R 30.0002	91
!04930002426	930315	930315	370,000	0			KLICKITAT R 30.0002	91
634362	930430	930430	19,500	19,184	60	0.313	KLICKITAT R 30.0002	91
634363	930430	930430	18,800	17,834	36	0.202	KLICKITAT R 30.0002	91
634403	930430	930430	19,100	18,836	32	0.170	KLICKITAT R 30.0002	91
634405	930430	930430	19,100	18,861	33	0.175	KLICKITAT R 30.0002	91
634406	930430	930430	19,700	19,062	36	0.189	KLICKITAT R 30.0002	91
634502	930430	930430	20,100	19,549	36	0.184	KLICKITAT R 30.0002	91
634503	930430	930430	19,900	19,588	31	0.158	KLICKITAT R 30.0002	91
634504	930430	930430	19,900	19,361	47	0.243	KLICKITAT R 30.0002	91
634505	930430	930430	19,100	18,418	34	0.185	KLICKITAT R 30.0002	91
634506	930430	930430	19,600	19,128	27	0.141	KLICKITAT R 30.0002	91
634507	930430	930430	19,900	19,418	22	0.113	KLICKITAT R 30.0002	91
634645	930430	930430	19,600	18,949	36	0.190	KLICKITAT R 30.0002	91
Totals for 91			763,300	228,188	430	0.188		

!04930002414	930104	930104	41,000	0			KLICKITAT R 30.0002	92
!04940004842	940303	940303	371,000	0			KLICKITAT R 30.0002	92
634830	940429	940429	19,300	19,036	129	0.678	KLICKITAT R 30.0002	92
634831	940429	940429	19,200	19,087	120	0.629	KLICKITAT R 30.0002	92
635003	930610	930610	305,400	221,872	5	0.002	KLICKITAT R 30.0002	92
635110	940429	940429	20,100	19,706	133	0.675	KLICKITAT R 30.0002	92
635111	940429	940429	19,500	19,309	110	0.570	KLICKITAT R 30.0002	92
635112	940429	940429	19,700	19,663	97	0.493	KLICKITAT R 30.0002	92
635113	940429	940429	19,600	19,217	85	0.442	KLICKITAT R 30.0002	92
635114	940429	940429	19,600	19,524	102	0.522	KLICKITAT R 30.0002	92
635305	940429	940429	19,600	19,406	117	0.603	KLICKITAT R 30.0002	92
635306	940429	940429	19,600	19,526	109	0.558	KLICKITAT R 30.0002	92
635307	940429	940429	19,700	19,468	114	0.586	KLICKITAT R 30.0002	92
635308	940429	940429	19,600	19,365	111	0.573	KLICKITAT R 30.0002	92
635309	940429	940429	19,900	19,703	95	0.482	KLICKITAT R 30.0002	92
Totals for 92			952,800	454,882	1,327	0.292		
!04940005128	940415	940415	942,000	0			KLICKITAT R 30.0002	93
!04940006109	940705	940705	36,600	0			KLICKITAT R 30.0002	93
635006	940601	940601	296,400	217,431	2	0.001	KLICKITAT R 30.0002	93
635245	950301	950302	317,000	48,855	68	0.139	KLICKITAT R 30.0002	93
635246	950301	950302	245,000	49,815	203	0.408	KLICKITAT R 30.0002	93
Totals for 93			1,837,000	316,101	273	0.086		
!04950002730	950714	950714	16000	0	0		KLICKITAT R 30.0002	94
!04950002731	950713	950713	6000	0	0		KLICKITAT R 30.0002	94
635836	9505	9506	233,900	210,667	1	0.000	KLICKITAT R 30.0002	94
635459	9603	9603	309,000	46,078	35	0.076	KLICKITAT R 30.0002	94
635458	9602	9603	301,000	42,872	4	0.009	KLICKITAT R 30.0002	94
Totals for 94			865,900	299,617	40	0.013		

Klickitat Hatchery *Late (Type N) Coho*

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!0497000849	970415	970430	73,688	0			KLICKITAT R 30.0002	95
!0497000849	970415	970430	42,432	0			KLICKITAT R 30.0002	95
!0497000849	970415	970430	10,546	0			KLICKITAT R 30.0002	95
!0497000849	970415	970430	15,529	0			KLICKITAT R 30.0002	95
!0497000989	970601	970630	140,153	0			KLICKITAT R 30.0002	95
!0497000989	970601	970630	80,264	0			KLICKITAT R 30.0002	95
!0497000989	970601	970630	20,673	0			KLICKITAT R 30.0002	95
!0497000989	970601	970630	30,441	0			KLICKITAT R 30.0002	95
!0497001017	970501	970531	355,758	0			KLICKITAT R 30.0002	95
!0497001017	970501	970531	204,863	0			KLICKITAT R 30.0002	95
!0497001017	970501	970531	50,913	0			KLICKITAT R 30.0002	95
!0497001017	970501	970531	74,972	0			KLICKITAT R 30.0002	95
636202	970415	970630	24,732	24,534	2	0.008	KLICKITAT R 30.0002	95
636203	970415	970630	36,591	35,712	4	0.011	KLICKITAT R 30.0002	95
Totals for 95			1,161,555	60,246	6	0.010		

!0498001285	980601	980606	116,115	0			KLICKITAT R	30.0002	96
!0498001286	980501	980531	415,712	0			KLICKITAT R	30.0002	96
!0498001286	980417	980430	26,364	0			KLICKITAT R	30.0002	96
636207	980417	980606	138,411	32,863	6	0.018	KLICKITAT R	30.0002	96
636208	980417	980606	32,814	31,928	3	0.009	KLICKITAT R	30.0002	96
Totals for 96			729,436	64,791	9	.014			
636217	9905	9905	29,810	29,513	28	0.095	KLICKITAT R	30.0002	97
636218	9905	9905	29,480	29,304	8	0.027	KLICKITAT R	30.0002	97
!04990017422	990503	990505	1,040,710	0			KLICKITAT R	30.0002	97
Totals for 97			1,100,000	58,817	36	0.061			

Lewis River Hatchery				Spring Chinook					
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site		BY
!04910000050	910309	910309	106,000	0			LEWIS R		27.0168
!04910000051	910308	910308	104,000	0			LEWIS R		27.0168
631116	910325	910325	759,800	138,310	643	0.465	LEWIS R		27.0168
Totals for 89			969,800	138,310	643	0.465			
!04910001035	910611	910611	50,000	0			LEWIS R		27.0168
634240	920322	920322	726,100	50,161	126	0.251	LEWIS R		27.0168
634243	920312	920316	190,000	52,496	532	1.013	LEWIS R		27.0168
Totals for 90			966,100	102,657	658	0.641			
!04930002262	930326	930326	142,000	0			LEWIS R		27.0168
634212	930225	930225	660,000	86,324	26	0.030	LEWIS R		27.0168
634430	930326	930326	259,000	39,995	11	0.028	LEWIS R		27.0168
Totals for 91			1,061,000	126,319	37	0.029			
!04940004853	940319	940319	393,900	0			LEWIS R		27.0168
!04940004854	940318	940318	300,000	0			LEWIS R		27.0168
634948	940304	940305	642,000	146,602	321	0.219	LEWIS R		27.0168
Totals for 92			1,335,900	146,602	321	0.219			
635253	950212	950320	618,200	44,233	54	0.122	LEWIS R -NF		27.0168
635330	950212	950320	694,400	99,047	83	0.084	LEWIS R -NF		27.0168
Totals for 93			1,312,600	143,280	137	0.096			
635663	9602	9602	666,900	91,017	244	0.268	LEWIS R		27.0168
635643	9603	9603	455,500	37,170	39	0.105	LEWIS R		27.0168
Totals for 94			1,122,400	128,187	283	0.221			

Lewis River Hatchery Fall (Type S) Coho									
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site		BY
!0497000864	970401	970415	13,584	0			LEWIS R -NF		27.0168
!0497000928	970416	970430	65,715	0			LEWIS R		27.0168
!0497000962	970501	970517	278,507	0			LEWIS R		27.0168
!0497000963	970518	970518	460,299	0			LEWIS R		27.0168
636146	970401	970518	75,303	70,617	506	0.717	LEWIS R + LEWIS R-NF		95
636147	970401	970518	75,001	68,835	531	0.771	LEWIS R		27.0168
Totals for 95			968,409	139,452	1,037	0.744			
636155	980420	980517	73,735	73,168	306	0.418	LEWIS R		27.0168
636156	980420	980517	251,531	73,416	433	0.590	LEWIS R		27.0168
Totals for 96			325,266	146,584	739	0.504			

!04990015768	990501	990518	247,395	0	0		LEWIS R -NF 27.0168	97
!04990015758	990416	990430	122,104	0	0		LEWIS R -NF 27.0168	97
!04990015775	990518	990518	307,959	0	0		LEWIS R -NF 27.0168	97
630558	990401	990518	73,584	73,001	698	0.956	LEWIS R -NF 27.0168	97
630559	9904	9905	75,336	74,298	278	0.374	LEWIS R -NF 27.0168	97
Totals for 97			826,378	147,299	976	0.663		

Lewis River Hatchery Late (Type N) Coho

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!0497000865	970401	970415	10,876	0			LEWIS R -NF 27.0168	95
!0497000865	970401	970415	25,545	0			LEWIS R -NF 27.0168	95
!0497000929	970416	970430	52,616	0			LEWIS R 27.0168	95
!0497000929	970416	970430	123,577	0			LEWIS R 27.0168	95
!0497000962	970501	970517	222,999	0			LEWIS R 27.0168	95
!0497000962	970501	970517	523,754	0			LEWIS R 27.0168	95
!0497000963	970518	970518	397,074	0			LEWIS R 27.0168	95
!0497000963	970518	970518	557,043	0			LEWIS R 27.0168	95
636151	970401	970630	72,438	70,917	414	0.584	LEWIS-NF+KLICKITAT R	95
Totals for 95			1,985,922	70,917	414	0.584		
!0498001287	980501	980517	525,542	0			LEWIS R 27.0168	96
!0498001287	980501	980517	181,032	0			LEWIS R 27.0168	96
!0498001287	980517	980517	928,680	0			LEWIS R 27.0168	96
!0498001287	980517	980517	211,763	0			LEWIS R 27.0168	96
!0498001288	980420	980430	288,197	0			LEWIS R 27.0168	96
!0498001288	980420	980430	77,836	0			LEWIS R 27.0168	96
630339	980420	980517	76,390	73,246	519	0.709	LEWIS R 27.0168	96
Totals for 96			2,289,440	73,246	519	0.709		
630561	9904	9905	75,270	74,527	357	0.479	LEWIS R -NF 27.0168	97
630560	990401	990518	73,926	73,632	1,537	2.087	LEWIS R -NF 27.0168	97
!04000021901	001026	001026	41	0			MUDDY FORK R26.1205	97
!04000021902	001031	001031	5	0			SWIFT RES (SKAM)	97
!04000021903	001031	001031	4	0			MUDDY FORK R26.1205	97
!04000022258	001207	001207	165	0			CHELATCHIE-NF270373	97
!04000022259	001211	001211	120	0			CHELATCHIE-NF 70373	97
!04980013109	980420	980420	147,600	0			LK MERWIN (COWL)	97
!04980013107	980402	980402	82,000	0			LK MERWIN (COWL)	97
!04980013106	980710	980710	116,955	0			LK MERWIN (COWL)	97
!04000022260	001212	001212	120	0			CHELATCHIE-NF270373	97
!04980011562	980325	980325	229,600	0			LK MERWIN (COWL)	97
!04980011561	980325	980325	49,200	0			LK MERWIN (COWL)	97
!04980011560	980312	980312	40,000	0			LK MERWIN (COWL)	97
!04980011559	980312	980312	328,600	0			LK MERWIN (COWL)	97
!04980011558	980305	980305	425,205	0			LK MERWIN (COWL)	97
!04980013108	980420	980420	114,800	0			LK MERWIN (COWL)	97
!04990015778	990518	990518	488,095	0			LEWIS R -NF 27.0168	97
!04990015754	990401	990415	119,913	0			LEWIS R -NF 27.0168	97
!04990015755	990416	990430	137,118	0			LEWIS R -NF 27.0168	97
!04000021900	001026	001026	41	0			SWIFT RES (SKAM)	97
!04990015765	990501	990518	278,707	0			LEWIS R -NF 27.0168	97
!04990015771	990501	990518	392,638	0			LEWIS R -NF 27.0168	97
!04990015772	990518	990518	348,303	0			LEWIS R -NF 27.0168	97
!04990015761	990416	990430	194,259	0			LEWIS R -NF 27.0168	97
!04990015748	990401	990415	85,424	0			LEWIS R -NF 27.0168	97
Totals for 97			4,630,557	148,159	1,894	1.278		

Lyons Ferry Hatchery

Fall Chinook

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!04900000312	900606	900606	39,813	0			SNAKE R-LOWR 33.0002	89
!04900000313	900606	900606	39,863	0			SNAKE R-LOWR 33.0002	89
!04900000314	900702	900702	534,174	0			SNAKE R-LOWR 33.0002	89
!04900000315	900712	900712	227,413	0			SNAKE R-LOWR 33.0002	89
!04900000397	900606	900606	303,255	0			SNAKE R-LOWR 33.0002	89
!04900000398	900618	900618	793,349	0			SNAKE R-LOWR 33.0002	89
!04900000399	900625	900625	604,205	0			SNAKE R-LOWR 33.0002	89
635544	900606	900606	127,302	123,640	132	0.107	SNAKE R-LOWR 33.0002	89
635547	900606	900606	126,834	123,233	95	0.077	SNAKE R-LOWR 33.0002	89
635549	900608	900608	122,820	118,104	117	0.099	SNAKE R-LOWR 33.0002	89
635550	900608	900608	124,728	119,941	137	0.114	SNAKE R-LOWR 33.0002*	89
Totals for 89			3,043,756	484,918	481	0.099	*Barged Tag Groups	
!04920000696	920415	920415	5,125	0			SNAKE R-LOWR 33.0002	90
!04920000697	920415	920415	5,207	0			SNAKE R-LOWR 33.0002	90
634012	920415	920415	24,067	23,954	25	0.104	SNAKE R-LOWR 33.0002	90
634013	920417	920417	21,405	21,137	28	0.132	SNAKE R-LOWR 33.0002	90
634118	920415	920415	219,625	218,110	183	0.084	SNAKE R-LOWR 33.0002	90
634120	920417	920417	205,240	202,674	200	0.099	SNAKE R-LOWR 33.0002	90
634143	910602	910602	112,346	111,784	273	0.244	SNAKE R-LOWR 33.0002*	90
634160	910602	910602	112,093	110,748	217	0.196	SNAKE R-LOWR 33.0002*	90
634209	920415	920415	105,612	104,820	97	0.093	SNAKE R-LOWR 33.0002	90
634210	920417	920417	98,934	98,374	65	0.066	SNAKE R-LOWR 33.0002	90
634320	920415	920415	4,386	4,386	1	0.023	SNAKE R-LOWR 33.0002	90
Totals for 90			914,040	895,987	1,089	0.122	*Barged Tag Groups	
633731	930419	930419	9,393	9,196	28	0.304	SNAKE R-LOWR 33.0002	91
634618	930419	930419	84,443	82,796	95	0.115	SNAKE R-LOWR 33.0002	91
634631	930412	930412	51,823	51,408	124	0.241	SNAKE R-LOWR 33.0002	91
634655	930412	930412	52,197	52,093	81	0.155	SNAKE R-LOWR 33.0002	91
634656	930419	930419	52,105	49,656	89	0.179	SNAKE R-LOWR 33.0002	91
634657	930419	930419	54,136	53,595	96	0.179	SNAKE R-LOWR 33.0002	91
634658	930412	930412	51,975	51,663	86	0.166	SNAKE R-LOWR 33.0002	91
634659	930412	930412	51,995	51,371	85	0.165	SNAKE R-LOWR 33.0002	91
634660	930412	930412	51,991	51,887	45	0.087	SNAKE R-LOWR 33.0002	91
634661	930412	930412	51,576	51,370	76	0.148	SNAKE R-LOWR 33.0002	91
634662	930412	930412	51,720	51,410	87	0.169	SNAKE R-LOWR 33.0002	91
634663	930412	930412	51,720	50,892	54	0.106	SNAKE R-LOWR 33.0002	91
634703	930419	930419	38,599	38,460	84	0.218	SNAKE R-LOWR 33.0002	91
634705	930419	930419	38,556	38,170	93	0.244	SNAKE R-LOWR 33.0002	91
634706	930419	930419	34,901	33,994	58	0.171	SNAKE R-LOWR 33.0002	91
634709	930419	930419	32,888	31,901	31	0.097	SNAKE R-LOWR 33.0002	91
Totals for 91			760,018	749,862	1,212	0.162		

634758	940419	940419	51,522	51,316	208	0.405	SNAKE R-LOWR 33.0002	92
634760	940419	940419	51,886	51,160	282	0.551	SNAKE R-LOWR 33.0002	92
634763	940419	940419	52,416	50,481	211	0.418	SNAKE R-LOWR 33.0002	92
634912	940418	940418	51,441	51,168	268	0.524	SNAKE R-LOWR 33.0002	92
634915	940418	940418	51,531	51,258	207	0.404	SNAKE R-LOWR 33.0002	92
634917	940418	940418	51,798	51,487	279	0.542	SNAKE R-LOWR 33.0002	92
634918	940418	940418	51,799	51,488	200	0.388	SNAKE R-LOWR 33.0002	92
634920	940418	940418	49,452	49,248	221	0.449	SNAKE R-LOWR 33.0002	92
635012	930624	930624	206,775	203,177	984	0.484	SNAKE R-LOWR 33.0002	92
635224	940418	940418	53,497	53,276	311	0.584	SNAKE R-LOWR 33.0002	92
635227	940419	940419	51,777	51,260	193	0.377	SNAKE R-LOWR 33.0002	92
635229	940419	940419	52,060	50,915	210	0.412	SNAKE R-LOWR 33.0002	92
635263	940419	940419	33,871	33,736	196	0.581	SNAKE R-LOWR 33.0002	92
Totals for 92			809,825	799,970	3,770	0.471		
635162	950417	950417	89,885	89,804	1,183	1.317	SNAKE R-LOWR 33.0002	93
635163	950417	950417	101,465	101,161	1,056	1.044	SNAKE R-LOWR 33.0002	93
635639	950417	950417	82,858	82,618	1,014	1.227	SNAKE R-LOWR 33.0002	93
635640	950417	950417	74,816	73,988	707	0.956	SNAKE R-LOWR 33.0002	93
Totals for 93			349,024	347,571	3,960	1.139		
635845	9604	9604	207,273	206,860	1,101	0.532	SNAKE R-LOWR 33.0002	94
635844	9604	9604	196,997	196,604	1,202	0.611	SNAKE R-LOWR 33.0002	94
232713	950518	950817	12,929	12,929	127	0.982	SNAKE R-LOWR 33.0002	94
232712	9505	9508	12,929	12,929	138	1.067	SNAKE R-LOWR 33.0002	94
Totals for 94			430,128	429,322	2,568	0.598		

<i>Methow Hatchery</i>				<i>Spring Chinook</i>					
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site		BY
635133	940418	940418	3,441	3,414	1	0.029	CHEWUCH R	48.0728	92
635121	940418	940418	5,196	5,165	2	0.039	CHEWUCH R	48.0728	92
634332	940418	940418	2,536	2,511	1	0.040	CHEWUCH R	48.0728	92
635140	940418	940418	3,299	3,228	2	0.062	CHEWUCH R	48.0728	92
635138	940418	940418	3,580	3,580	3	0.084	CHEWUCH R	48.0728	92
634848	940418	940418	4,148	4,148	4	0.096	CHEWUCH R	48.0728	92
635123	940418	940418	4,076	4,051	4	0.099	CHEWUCH R	48.0728	92
634331	940418	940418	2,587	2,577	3	0.116	CHEWUCH R	48.0728	92
635139	940418	940418	3,126	3,120	4	0.128	CHEWUCH R	48.0728	92
635124	940418	940418	4,417	4,417	7	0.158	CHEWUCH R	48.0728	92
634850	940418	940418	4,476	4,432	8	0.181	CHEWUCH R	48.0728	92
635125	940415	940415	4,474	4,197	1	0.024	TWISP R	48.0374	92
635137	940415	940415	3,996	3,821	1	0.026	TWISP R	48.0374	92
635122	940415	940415	5,202	5,150	2	0.039	TWISP R	48.0374	92
634849	940415	940415	4,288	4,194	2	0.048	TWISP R	48.0374	92
635141	940415	940415	3,368	3,355	2	0.060	TWISP R	48.0374	92
635135	940415	940415	3,194	3,169	3	0.095	TWISP R	48.0374	92
634851	940415	940415	4,056	4,032	5	0.124	TWISP R	48.0374	92
635136	940415	940415	3,398	3,316	5	0.151	TWISP R	48.0374	92
635134	940415	940415	3,905	3,835			TWISP R	48.0374	92
Totals for 92			76,763	75,712	60	0.079			

635161	950417	950428	81,593	79,804	12	0.015	CHEWUCH R	48.0728	93
635350	950417	950428	23,697	23,236	5	0.022	CHEWUCH R	48.0728	93
634127	950417	950428	178,875	174,761	87	0.050	CHEWUCH R	48.0728	93
635551	950415	950427	189,731	187,496	160	0.085	METHOW R	48.0002	93
635410	950415	950427	21,118	20,758	19	0.092	METHOW R	48.0002	93
635609	950417	950426	16,721	16,638	2	0.012	TWISP R	48.0374	93
635329	950417	950426	100,028	96,319	18	0.019	TWISP R	48.0374	93
93 Totals			611,763	599,012	303	0.051			
634515	9604	9604	6,268	6,197	1	0.016	TWISP R	48.0374	94
635416	9604	9604	3,838	3,805	2	0.053	CHEWUCH R	48.0728	94
635419	9604	9604	4,508	4,457	2	0.045	TWISP R	48.0374	94
635418	9604	9604	4,551	4,499	2	0.044	TWISP R	48.0374	94
635417	960421	960427	4,477	4,460	1	0.022	METHOW R	48.0002	94
Totals for 94			23,642	23,418	8	0.034			

North Toutle Hatchery				Fall Chinook						
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site		BY	
631349	900605	900605	2,152,100	96,574	35	0.036	ALDER CR	26.0387	89	
!04900001254	900605	900605	1,252,800	0			ALDER CR	26.0387	89	
Totals for 89			3,404,900	96,574	35	0.036				
634019	910617	910617	1,710,700	49,206	22	0.045	GREEN R	26.0323	90	
634020	910617	910617	601,900	48,857	50	0.102	GREEN R	26.0323	90	
634236	910617	910617	382,100	51,227	144	0.281	GREEN R	26.0323	90	
Totals for 90			2,694,700	149,290	216	0.145				
633115	920530	920530	725,200	144,831	24	0.017	GREEN R	26.0323	91	
!04920001110	920530	920530	1,685,200	0			GREEN R	26.0323	91	
Totals for 91			2,410,400	144,831	24	0.017				
634934	930618	930618	148,500	88,952	22	0.025	GREEN R	26.0323	92	
!04930003075	930618	930618	541,300	0			GREEN R	26.0323	92	
!04930003076	930618	930618	2,754,500	0			GREEN R	26.0323	92	
Totals for 92			3,444,300	88,952	22	0.025				
635048	940620	940620	2,044,500	91,687	174	0.190	GREEN R	26.0323	93	
Totals for 93			2,044,500	91,687	174	0.190				
635206	9506	9506	2,498,200	80,795	18	0.022	GREEN R	26.0323	94	
Totals for 94			2,498,200	80,795						

North Toutle Hatchery				Spring Chinook						
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site		BY	
634533	930404	930404	39,482	38,416	24	0.06	GREEN R	26.0323	91	
Totals for 91			39,482	38,416	24	0.06				
!04950001074	950301	950331	56,500	0			GREEN R	26.0323	93	
635354	950227	950227	148,600	24,607	2	0.01	GREEN R	26.0323	93	
635355	950301	950430	170,500	24,251	17	0.07	GREEN R	26.0323	93	
Totals for 93			375,600	48,858	19	0.04				

North Toutle Hatchery Early (Type S) Coho

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY	
!0496000511	960208	960209	109,100	0			GREEN R	26.0323	95
!0497000927	970501	970515	337,963	0			GREEN R	26.0323	95
!0497000927	970501	970515	2,006	0			GREEN R	26.0323	95
636235	970501	970515	31,100	31,055	568	1.829	GREEN R	26.0323	95
Totals for 95			480,169	31,055	568	1.829			
!0498001186	980401	980430	1,089,283	0			GREEN R	26.0323	96
630535	980401	980430	30,517	30,221	111	0.367	GREEN R	26.0323	96
Totals for 96			1,119,800	30,221	111	0.367			
!04990017213	990412	990430	952,327						
630829	9904	9904	31,684	30,410	248	0.816	GREEN R	26.0323	97
Totals for 97			984,011	30,410	248	0.816			

Priest Rapids Hatchery Fall Chinook

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!04900000316	900607	900607	39,360	0			COLUMBIA R AT PRIEST	89
!04900000320	900610	900610	40,170	0			COLUMBIA R AT PRIEST	89
!04900000327	900613	900613	40,150	0			COLUMBIA R AT PRIEST	89
!04900000331	900616	900616	40,450	0			COLUMBIA R AT PRIEST	89
!04900000335	900619	900619	40,380	0			COLUMBIA R AT PRIEST	89
630732	900607	900619	6,230,590	194,530	588	0.302	COLUMBIA R AT PRIEST	89
Totals for 89			6,431,100	194,530	588	0.302		
634057	910614	910626	5,041,492	199,469	1,213	0.608	COLUMBIA R AT PRIEST	90
!04910001198	910614	910614	40,383	0			COLUMBIA R AT PRIEST	90
!04910001199	910617	910617	40,335	0			COLUMBIA R AT PRIEST	90
!04910001200	910620	910620	41,550	0			COLUMBIA R AT PRIEST	90
!04910001201	910623	910623	40,445	0			COLUMBIA R AT PRIEST	90
!04910001202	910626	910626	35,495	0			COLUMBIA R AT PRIEST	90
!04910001203	910614	910614	45,800	0			COLUMBIA R AT PRIEST	90
!04910001204	910614	910614	48,000	0			COLUMBIA R AT PRIEST	90
Totals for 90			5,333,500	199,469	1,213	0.608		
634341	920615	920624	4,997,989	201,647	80	0.040	COLUMBIA R AT PRIEST	91
!04920001339	920615	920615	43,850	0			COLUMBIA R AT PRIEST	91
!04920001340	920618	920618	67,600	0			COLUMBIA R AT PRIEST	91
!04920001341	920615	920615	43,950	0			COLUMBIA R AT PRIEST	91
!04920001342	920624	920624	40,255	0			COLUMBIA R AT PRIEST	91
!04920001346	920621	920621	40,127	0			COLUMBIA R AT PRIEST	91
!04920001353	920618	920618	40,244	0			COLUMBIA R AT PRIEST	91
!04920001354	920615	920615	40,085	0			COLUMBIA R AT PRIEST	91
!04920001416	920612	920612	40,643	0			COLUMBIA R AT PRIEST	91
!04920001423	920612	920612	48,862	0			COLUMBIA R AT PRIEST	91
0501010515	920612	920612	547,582	46,841	13	0.028	COLUMBIA R AT PRIEST	91
0501010601	920612	920612	546,473	47,738	6	0.013	COLUMBIA R AT PRIEST	91
0501010602	920612	920612	550,302	48,862	2	0.004	COLUMBIA R AT PRIEST	91
Totals for 91			7,047,962	345,088	101	0.029		

635010	930618	930627	5,149,688	194,622	447	0.230	COLUMBIA R AT PRIEST	92
!04930003377	930618	930618	42,052	0			COLUMBIA R AT PRIEST	92
!04930003378	930618	930618	133,000	0			COLUMBIA R AT PRIEST	92
!04930003379	930621	930621	42,139	0			COLUMBIA R AT PRIEST	92
!04930003380	930624	930624	42,132	0			COLUMBIA R AT PRIEST	92
!04930003381	930627	930627	41,989	0			COLUMBIA R AT PRIEST	92
!04930003382	930615	930615	31,937	0			COLUMBIA R AT PRIEST	92
!04930003383	930615	930615	903,063	0			COLUMBIA R AT PRIEST	92
0501010807	930504	930504	249,346	244,359	107	0.044	YAKIMA R-LOW 37.0002	92
0501010808	930504	930504	249,557	244,566	170	0.070	YAKIMA R-LOW 37.0002	92
0501010809	930511	930512	249,256	248,259	68	0.027	YAKIMA R-LOW 37.0002	92
Totals for 92			7,134,159	931,806	792	0.085		
!04940006319	940620	940620	34,917	0			COLUMBIA R AT PRIEST	93
!04940006320	940618	940618	38,504	0			COLUMBIA R AT PRIEST	93
!04940006321	940614	940614	36,024	0			COLUMBIA R AT PRIEST	93
!04940006322	940612	940612	50,188	0			COLUMBIA R AT PRIEST	93
!04940006326	940616	940616	38,227	0			COLUMBIA R AT PRIEST	93
!04940006336	940612	940612	1,647,172	0			COLUMBIA R AT PRIEST	93
635540	940614	940620	6,705,836	185,683	1,362	0.734	COLUMBIA R AT PRIEST	93
Totals for 93			8,550,868	185,683	1,362	0.734		
!4950001138	950613	950616	1,700,000	0	0		COLUMBIA R AT PRIEST	94
635711	9506	9506	5,002,000	156,874	109	0.069	COLUMBIA R AT PRIEST	94
Totals for 94			6,702,000	156,874	109	0.069		

Ringold Hatchery				Fall Chinook				
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
501011212	9506	9506	707,504	99,365	26	0.026	SPRINGS CR 36.0114	94
71043	9506	9506	1,408,695	104,961	13	0.012	SPRINGS CR 36.0114	94
71042	9506	9506	1,408,696	101,733	3	0.003	SPRINGS CR 36.0114	94
Totals for 94			3,524,895	306,059	42	0.014		
Ringold Hatchery				Spring Chinook				
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
631150	910401	910401	1,164,117	42,486	176	0.414	HANFORD REACH (36)	89
!04900001266	900319	900319	13,000	0			HANFORD REACH (36)	89
!04910000505	910401	910401	20,125	0			HANFORD REACH (36)	89
!04910000506	910401	910401	15,758	0			HANFORD REACH (36)	89
Totals for 89			1,213,000	42,486	176	0.414		
634015	920401	920401	1,050,000	30,092	54	0.179	HANFORD REACH (36)	90
Totals for 90			1,050,000	30,092	54	0.179		
634446	930401	930401	669,400	44,557	12	0.027	SPRINGS CR 36.0114	91
Totals for 91			669,400	44,557	12	0.027		
634806	940411	940411	781,742	27,486	56	0.204	SPRINGS CR 36.0114	92
Totals for 92			781,742	27,486	56	0.204		
635347	950401	950404	1,180,000	34,681	29	0.084	SPRINGS CR 36.0114	93
Totals for 93			1,180,000	34,681	29	0.084		
635733	9604	9604	1,025,494	38,698	32	0.083	RINGOLD POND (TROUT)	94
Totals for 94			1,025,494	38,698	32	0.083		

Tucannon Hatchery

Spring Chinook

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
630131	910412	910412	22,407	22,118	73	0.330	TUCANNON R	35.0009
631461	910412	910412	76,650	75,661	184	0.243	TUCANNON R	35.0009
Totals for 89			99,057	97,779	257	0.263		
633725	920410	920410	13,480	13,480	1	0.007	TUCANNON R	35.0009
634021	920410	920410	51,149	51,149	14	0.027	TUCANNON R	35.0009
634311	920410	920410	21,168	21,168	10	0.047	TUCANNON R	35.0009
Totals for 90			85,797	85,797	25	0.029		
634625	930412	930412	56,506	55,710	15	0.027	TUCANNON R	35.0009
634647	930412	930412	17,552	16,745	15	0.090	TUCANNON R	35.0009
Totals for 91			74,058	72,455	30	0.041		
634810	940418	940418	36,276	35,405	41	0.116	TUCANNON R	35.0009
634823	931021	931021	25,134	24,883	5	0.020	TUCANNON R	35.0009
634824	931021	931021	24,985	24,685	0		TUCANNON R	35.0009
634855	940418	940418	9,076	8,277	9	0.109	TUCANNON R	35.0009
634856	931021	931021	7,197	7,111	0		TUCANNON R	35.0009
634905	940418	940418	38,057	35,469	51	0.144	TUCANNON R	35.0009
Totals for 92			140,725	135,830	106	0.078		
635343	950315	950415	45,147	44,939	65	0.145	TUCANNON R	35.0009
635344	950315	950415	45,148	42,807	36	0.084	TUCANNON R	35.0009
635615	950320	950404	15,617	15,452	25	0.162	TUCANNON R	35.0009
635617	950320	950404	14,632	14,244	6	0.042	TUCANNON R	35.0009
635618	950320	950404	18,304	18,154	22	0.121	TUCANNON R	35.0009
Totals for 93			138,848	135,596	154	0.114		
635629	9603	9604	89,437	87,871	26	0.030	TUCANNON R	35.0009
634323	9603	9603	5,263	5,252	1	0.019	TUCANNON R	35.0009
635729	9603	9604	35,369	35,299	6	0.017	TUCANNON R	35.0009
Totals for 94			130,069	128,422	33	0.026		

Turtle Rock Hatchery

Fall Chinook

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!04900000186	900321	900321	438,300	0			COL.R. @ TURTLE ROCK	89
!04900000187	900321	900321	241,500	0			COL.R. @ TURTLE ROCK	89
635907	910508	910508	220,400	90,306	575	0.637	COL.R. @ TURTLE ROCK	89
Totals for 89			900,200	90,306	575	0.637		
634223	920421	920421	211,000	90,100	103	0.114	COL.R. @ TURTLE ROCK	90
Totals for 90			211,000	90,100	103	0.114		
634617	930513	930513	201,000	87,515	185	0.211	COL.R. @ TURTLE ROCK	91
Totals for 91			201,000	87,515	185	0.211		
635045	940421	940421	202,000	87,991	460	0.523	COL.R. @ TURTLE ROCK	92
635058	930630	930630	1,522,000	71,846	11	0.015	COL.R. @ TURTLE ROCK	92
Totals for 92			1,724,000	159,837	471	0.295		
635317	940621	940621	838,000	196,159	253	0.129	COL.R. @ TURTLE ROCK	93
635705	950418	950420	290,000	193,994	1,091	0.562	COL.R. @ TURTLE ROCK	93
Totals for 93			1,128,000	390,153	1,344	0.344		
635710	9506	9506	1,494,000	193,935	14	0.007	COL.R. @ TURTLE ROCK	94
635843	9604	9604	193,300	183,700	239	0.130	COL.R. @ TURTLE ROCK	94
Totals for 94			1,687,300	377,635	253	0.137		

<i>Washougal Hatchery</i>		<i>Fall Chinook</i>						
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!04900000198	900122	900122	725,000	0			WASHOUGAL R 28.0159	89
!04900000199	900219	900219	480,000	0			WASHOUGAL R 28.0159	89
!04900000400	900723	900723	497,000	0			WASHOUGAL R 28.0159	89
635904	900613	900613	5,644,000	93,542	176	0.188	WASHOUGAL R 28.0159	89
Totals for 89			7,346,000	93,542	176	0.188		
!04910000045	910326	910326	702,300	0			WASHOUGAL R 28.0159	90
!04910000068	910301	910301	205,500	0			WASHOUGAL R 28.0159	90
!04910000070	910114	910114	187,500	0			WASHOUGAL R 28.0159	90
!04910000071	910128	910128	105,000	0			WASHOUGAL R 28.0159	90
!04910001295	910729	910729	505,200	0			WASHOUGAL R 28.0159	90
635621	910610	910610	5,920,000	91,498	214	0.234	WASHOUGAL R 28.0159	90
Totals for 90			7,625,500	91,498	214	0.234		
634616	920527	920527	5,522,700	86,236	86	0.100	WASHOUGAL R 28.0159	91
!04920000081	920122	920122	115,000	0			WASHOUGAL R 28.0159	91
!04920000082	920310	920310	318,100	0			WASHOUGAL R 28.0159	91
!04920001109	920619	920619	517,800	0			WASHOUGAL R 28.0159	91
Totals for 91			6,473,600	86,236	86	0.100		
635040	930803	930803	516,900	86,004	275	0.320	WASHOUGAL R 28.0159	92
635043	930617	930617	5,709,300	89,004	219	0.246	WASHOUGAL R 28.0159	92
!04920001496	920128	920128	105,000	0			WASHOUGAL R 28.0159	92
!04930002244	930322	930322	67,500	0			WASHOUGAL R 28.0159	92
!04930002398	930315	930315	272,300	0			WASHOUGAL R 28.0159	92
!04930002399	930315	930315	157,500	0			WASHOUGAL R 28.0159	92
!04930002640	930219	930219	90,000	0			WASHOUGAL R 28.0159	92
Totals for 92			6,918,500	175,008	494	0.282		
635158	940615	940615	5,504,803	94,881	251	0.265	WASHOUGAL R 28.0159	93
635159	940712	940712	516,800	91,490	131	0.143	WASHOUGAL R 28.0159	93
Totals for 93			6,021,603	186,371	382	0.205		
!04950001187	950530	950531	750,000	0	0		WASHOUGAL R 28.0159	94
!04950001188	950601	950601	750,000	0	0		WASHOUGAL R 28.0159	94
635515	9507	9507	519,700	85,712	59	0.069	WASHOUGAL R 28.0159	94
635512	9506	9506	4,132,000	89,450	23	0.026	WASHOUGAL R 28.0159	94
Totals for 94			6,151,700	175,162				

<i>Washougal Hatchery</i>		<i>Late (Type N) Coho</i>						
Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
!0497000927	970501	970501	92,151	0			WASHOUGAL R 28.0159	95
636238	970415	970630	27,450	27,034	134	0.496	KLICKITAT+ WASHOUGAL	95
Totals for 95			119,601	27,034	134	0.496		
!0498001269	980401	980408	712,876	0			KLICKITAT R 30.0002	96
!0498001270	980401	980408	475,419	0			KLICKITAT R 30.0002	96
!0498001271	980409	980409	1,042	0			WASHOUGAL R 28.0159	96
!0498001271	980409	980409	566	0			WASHOUGAL R 28.0159	96
!0498001272	980423	980423	471,048	0			WASHOUGAL R 28.0159	96
630544	980423	980423	30,797	30,377	267	0.879	WASHOUGAL R 28.0159	96
Totals for 96			1,691,748	30,377	267	0.879		

Washougal Hatchery

Late (Type N) Coho

cont.

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
630541	9904	9904	33,959	33,315	892	2.677	WASHOUGAL R 28.0159	97
630827	9904	9904	27,674	26,926	240	0.891	WASHOUGAL R 28.0159	97
630824	9904	9904	28,060	27,558	224	0.813	KLICKITAT R 30.0002	97
!04980013105	980414	980414	486,675	0			LK MERWIN (COWL)	97
!04990016847	990401	990416	1,242,040	0			KLICKITAT R 30.0002	97
!04990016850	990401	990416	1,217,447	0			KLICKITAT R 30.0002	97
!04990016853	990401	990416	6,229	0			WASHOUGAL R 28.0159	97
!04990016856	990401	990416	6,106	0			WASHOUGAL R 28.0159	97
!04990016857	990428	990428	73,998	0			WASHOUGAL R 28.0159	97
!04990016859	990428	990428	73,644	0			WASHOUGAL R 28.0159	97
!04990016861	990428	990428	45,576	0			WASHOUGAL R 28.0159	97
!04990016863	990428	990428	48,293	0			WASHOUGAL R 28.0159	97
!04990016865	990428	990428	73,452	0			WASHOUGAL R 28.0159	97
!04990016867	990428	990428	74,182	0			WASHOUGAL R 28.0159	97
!04990016869	990428	990428	74,589	0			WASHOUGAL R 28.0159	97
Totals for 97			3,511,924	87,799	1,356	1.544		

Wells Hatchery

Summer Chinook

Tag Code	YY/MM/DD First Release	YY/MM/DD Last Release	Released	Tagged	TT	Survival %	Release Site	BY
631149	900720	900720	210,473	48,966	5	0.010	COLUMBIA NEAR WELLS	89
631347	900525	900525	790,925	99,749	38	0.038	COLUMBIA NEAR WELLS	89
631352	900525	900525	519,731	75,600	11	0.015	COLUMBIA NEAR WELLS	89
89 Totals			1,521,129	224,315	54	0.024		
634133	920427	920427	371,369	122,657	67	0.055	COLUMBIA NEAR WELLS	90
!04910001136	910608	910608	436,024	0			COLUMBIA NEAR WELLS	90
635913	910624	910624	329,669	215,672	4	0.002	COLUMBIA NEAR WELLS	90
Totals for 90			1,137,062	338,329	71	0.021		
634139	920627	920627	493,919	220,930	4	0.002	COLUMBIA NEAR WELLS	91
634609	930416	930416	392,330	123,585	23	0.019	COLUMBIA NEAR WELLS	91
!04920000083	920121	920121	99,608	0			COLUMBIA NEAR WELLS	91
!04920000084	920121	920121	74,588	0			COLUMBIA NEAR WELLS	91
!04920000148	920330	920330	93,889	0			COL.R. NEAR BASIN 48	91
!04920000149	920330	920330	91,358	0			COL.R. NEAR BASIN 48	91
!04920000169	920311	920311	34,200	0			COL.R. NEAR BASIN 48	91
!04920000170	920311	920311	29,900	0			COL.R. NEAR BASIN 48	91
!04920000422	920406	920406	35,571	0			COLUMBIA NEAR WELLS	91
!04920000431	920406	920406	73,077	0			COLUMBIA NEAR WELLS	91
!04920000432	920419	920419	49,204	0			COLUMBIA NEAR WELLS	91
!04920000433	920413	920413	48,843	0			COLUMBIA NEAR WELLS	91
91 Totals			1,516,487	344,515	27	0.008		
635005	940427	940427	218,766	209,245	268	0.128	COLUMBIA NEAR WELLS	92
!04940005942	940427	940427	109,885	0			COLUMBIA NEAR WELLS	92
!04940005943	940427	940427	2,702	0			COLUMBIA NEAR WELLS	92
92 Totals			331,353	209,245	268	0.128		
635145	940628	940628	187,382	183,199	40	0.022	COLUMBIA NEAR WELLS	93
93 Totals			187,382	183,199	40	0.022		
634610	950415	950430	135,219	128,528	890	0.692	COLUMBIA NEAR WELLS	93
635702	950415	950430	253,029	237,154	859	0.362	COLUMBIA NEAR WELLS	93
93 Totals			388,248	365,682	1,749	0.478		
All 93 Totals			548,881			0.003		
635838	9604	9604	248,000	242,538	119	0.049	COL.R ROCKY R-WELLS	94
635703	9506	9506	233,013	218,042	7	0.003	COLUMBIA NEAR WELLS	94
635546	9506	9506	217,922	203,921	4	0.002	COLUMBIA NEAR WELLS	94
635324	9604	9604	117,000	108,380	9	0.008	COL.R ROCKY R-WELLS	94
94 Totals			815,935	772,881	139	0.018		

Appendix D. CWT disposition of recovery. Brood years 1989-1994 for all runs of chinook and 1995-1997 for both runs of coho. Brood years with no releases are not included. Data is shown by hatchery, species, run and brood year. Expanded numbers are estimates of total recoveries. Dividing the total fish released for that brood year by the number of coded-wire tagged fish released attains the expansion factor. Tag Rec is the expanded number of tags recovered, which has been extracted from the RMIS database.

Cowlitz Salmon Hatchery		Fall Chinook					
Disposition of Recovery	1994		1993		1992		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	3	108	28	621	10	222	
Canada	1	36	25	554	7	155	
Oregon	6	216	11	244	12	266	
California	0	0	0	0	0	0	
Wa. Coastal Sport	0	0	0	0	0	0	
Columbia Estuary Sport	2	72	5	111	0	0	
Lower Columbia Sport	0	0	5	111	0	0	
Terminal Sport	0	0	0	0	0	0	
WA Commercial\Treaty Coastal	6	216	1	22	8	177	
Columbia Commercial\Treaty	0	0	3	67	2	44	
Hatchery Escapement	21	757	156	3459	181	4013	
Spawning Ground Escapement	0	0	12	266	12	266	
Disposition of Recovery	1991		1990		1989		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	5	156	8	436	6	295	
Canada	5	156	18	980	29	1424	
Oregon	0	0	18	980	9	442	
California	0	0	0	0	0	0	
Wa. Coastal Sport	3	93	24	1307	17	835	
Columbia Estuary Sport	0	0	4	218	0	0	
Lower Columbia Sport	0	0	0	0	0	0	
Terminal Sport	0	0	37	2014	7	344	
WA Commercial\Treaty Coastal	0	0	17	926	46	2259	
Columbia Commercial\Treaty	0	0	10	544	2	98	
Hatchery Escapement	125	3892	194	10562	37	1817	
Spawning Ground Escapement	17	529	51	2777	14	687	

Cowlitz Salmon Hatchery		Spring Salmon				
Disposition of Recovery	1994		1993		1992	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	7	30	8	39	0	0
Canada	32	139	21	102	5	242
Oregon	2	9	17	83	3	145
California	0	0	0	0	0	0
Wa. Coastal Sport	1	4	0	0	0	0
Columbia Estuary Sport	0	0	0	0	0	0
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	43	187	0	0	0	0
WA Commercial\Treaty Coastal	1	4	6	29	0	0
Columbia Commercial\Treaty	2	9	1	5	0	0
Hatchery Escapement	272	1182	225	1096	91	4404
Spawning Ground Escapement	16	70	0	0	0	0
Disposition of Recovery	1991		1990		1989	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	6	24	22	97	93	707
Canada	80	321	163	719	956	7269
Oregon	11	44	12	53	188	1430
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	50	221	407	3095
Columbia Estuary Sport	4	16	3	13	120	912
Lower Columbia Sport	0	0	0	0	41	312
Terminal Sport	79	317	176	776	1229	9345
WA Commercial\Treaty Coastal	7	28	36	159	477	3627
Columbia Commercial\Treaty	5	20	5	22	106	806
Hatchery Escapement	541	2172	1926	8495	3304	25124
Spawning Ground Escapement	65	261	75	331	45	342

Cowlitz Salmon Hatchery		Late (Type N) Coho	
Disposition of Recovery	1997		
	Tag Rec	Expanded	
Alaska	0	0	
Canada	1	62	
Oregon	156	9604	
California	0	0	
Wa. Coastal Sport	289	17792	
Columbia Estuary Sport	11	677	
Lower Columbia Sport	0	0	
Terminal Sport	0	0	
WA Commercial\Treaty Coastal	19	1170	
Columbia Commercial\Treaty	565	34784	
Hatchery Escapement	587	36138	
Spawning Ground Escapement	1	62	

Eastbank Complex		Chiwawa		Spring Chinook		
Disposition of Recovery	1994		1993		1992	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	0	0	0	0
Canada	0	0	4	4	0	0
Oregon	0	0	1	1	1	1
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	0	0	0	0
Columbia Estuary Sport	0	0	3	3	0	0
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	0	0	0	0	0	0
WA Commercial\Treaty Coastal	0	0	0	0	0	0
Columbia Commercial\Treaty	0	0	0	0	0	0
Hatchery Escapement	14	14	79	80	0	0
Spawning Ground Escapement	6	6	20	20	31	32
Disposition of Recovery	1991		1990		1989	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	0	0	0	0
Canada	0	0	0	0	0	0
Oregon	3	3	0	0	5	5
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	0	0	0	0
Columbia Estuary Sport	0	0	0	0	0	0
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	0	0	18	18	17	17
WA Commercial\Treaty Coastal	0	0	0	0	3	3
Columbia Commercial\Treaty	0	0	0	0	0	0
Hatchery Escapement	1	1	1	1	4	4
Spawning Ground Escapement	31	32	0	0	160	161

EastbankComplex		Similkameen		Summer Chinook		
Disposition of Recovery	1994		1993		1992	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	249	629	19	30	305	311
Canada	89	225	5	8	76	77
Oregon	16	40	0	0	30	31
California	3	8	0	0	0	0
Wa. Coastal Sport	0	0	0	0	2	2
Columbia Estuary Sport	0	0	0	0	0	0
Lower Columbia Sport	7	18	0	0	4	4
Terminal Sport	0	0	0	0	6	6
WA Commercial\Treaty Coastal	10	25	0	0	12	12
Columbia Commercial\Treaty	14	35	0	0	6	6
Hatchery Escapement	201	507	30	47	565	576
Spawning Ground Escapement	924	2333	0	0	204	208

Disposition of Recovery	1991		1990		1989	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	69	129	127	187	567	989
Canada	30	56	102	150	681	1188
Oregon	5	9	0	0	15	26
California	2	4	0	0	4	7
Wa. Coastal Sport	0	0	0	0	36	63
Columbia Estuary Sport	0	0	0	0	30	52
Lower Columbia Sport	0	0	4	6	9	16
Terminal Sport	0	0	4	6	3	5
WA Commercial\Treaty Coastal	0	0	0	0	36	63
Columbia Commercial\Treaty	0	0	5	7	117	204
Hatchery Escapement	242	454	200	294	780	1361
Spawning Ground Escapement	501	939	497	731	1795	3131

Disposition of Recovery	Dryden Pond		Summer Chinook			
	1994	Tag Rec	1993	Tag Rec	Expanded	1992
Alaska	437	781	15	65	85	88
Canada	113	202	17	73	30	31
Oregon	31	55	3	13	19	20
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	0	0	0	0
Columbia Estuary Sport	0	0	0	0	0	0
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	0	0	0	0	0	0
WA Commercial\Treaty Coastal	15	27	0	0	7	7
Columbia Commercial\Treaty	7	13	0	0	0	0
Hatchery Escapement	285	510	16	69	67	69
Spawning Ground Escapement	930	1663	0	0	59	61
Disposition of Recovery	1991		1990		1989	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	12	12	8	8	108	537
Canada	11	11	21	22	140	696
Oregon	2	2	0	0	20	99
California	0	0	0	0	4	20
Wa. Coastal Sport	0	0	0	0	6	30
Columbia Estuary Sport	0	0	0	0	4	20
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	18	18	0	0	4	20
WA Commercial\Treaty Coastal	0	0	0	0	10	50
Columbia Commercial\Treaty	0	0	0	0	30	149
Hatchery Escapement	8	8	14	15	145	720
Spawning Ground Escapement	1	1	71	74	287	1426

Eastbank Complex		Carlton Pond		Summer Chinook	
Disposition of Recovery	1994				
	Tag Rec	Expanded			
Alaska	96	101			
Canada	27	28			
Oregon	10	10			
California	0	0			
Wa. Coastal Sport	2	2			
Columbia Estuary Sport	0	0			
Lower Columbia Sport	0	0			
Terminal Sport	1	1			
WA Commercial\Treaty Coastal	2	2			
Columbia Commercial\Treaty	3	3			
Hatchery Escapement	94	99			
Spawning Ground Escapement	427	447			
Disposition of Recovery	1993		1992		1990
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec
Alaska	8	17	15	15	36
Canada	6	13	2	2	11
Oregon	0	0	0	0	8
California	0	0	0	0	0
Wa. Coastal Sport	0	0	0	0	0
Columbia Estuary Sport	0	0	0	0	0
Lower Columbia Sport	0	0	0	0	0
Terminal Sport	0	0	0	0	0
WA Commercial\Treaty Coastal	0	0	0	0	1
Columbia Commercial\Treaty	2	4	0	0	4
Hatchery Escapement	10	22	39	40	77
Spawning Ground Escapement	0	0	0	0	0

Elochoman Hatchery		Fall Chinook	
Disposition of Recovery	1994		
	Tag Rec	Expanded	
Alaska	3	113	
Canada	4	150	
Oregon	0	0	
California	0	0	
Wa. Coastal Sport	2	75	
Columbia Estuary Sport	0	0	
Lower Columbia Sport	0	0	
Terminal Sport	0	0	
WA Commercial\Treaty Coastal	3	113	
Columbia Commercial\Treaty	0	0	
Hatchery Escapement	22	827	
Spawning Ground Escapement	12	451	

Elochoman FCh cont. Disposition of Recovery	1993		1992		1991	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	56	379	34	858	0	0
Canada	63	426	7	177	13	578
Oregon	10	68	0	0	0	0
California	0	0	0	0	0	0
Wa. Coastal Sport	15	101	1	25	0	0
Columbia Estuary Sport	8	54	3	76	0	0
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	0	0	15	378	0	0
WA Commercial\Treaty Coastal	3	20	3	76	0	0
Columbia Commercial\Treaty	12	81	1	25	0	0
Hatchery Escapement	188	1272	157	3961	17	756
Spawning Ground Escapement	3	20	44	1110	14	622

Disposition of Recovery	Fall (Type S) Coho					
	1997		1996		1995	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	0	0	0	0
Canada	0	0	0	0	0	0
Oregon	12	140	0	0	0	0
California	0	0	0	0	0	0
Wa. Coastal Sport	10	117	30	473	22	199
Columbia Estuary Sport	9	105	0	0	0	0
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	0	0	0	0	0	0
WA Commercial\Treaty Coastal	0	0	2	32	0	0
Columbia Commercial\Treaty	52	609	24	379	0	0
Hatchery Escapement	89	1042	76	1199	1	9
Spawning Ground Escapement	0	0	0	0	0	0

Disposition of Recovery	Late (Type N) Coho					
	1997		1996		1995	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	0	0	0	0
Canada	0	0	0	0	0	0
Oregon	172	1073	0	0	8	33
California	0	0	0	0	0	0
Wa. Coastal Sport	275	1715	131	2819	40	166
Columbia Estuary Sport	6	37	1	22	11	46
Lower Columbia Sport	7	44	0	0	0	0
Terminal Sport	0	0	0	0	0	0
WA Commercial\Treaty Coastal	9	56	28	602	4	17
Columbia Commercial\Treaty	647	4034	277	5960	14	58
Hatchery Escapement	724	4515	199	4282	139	576
Spawning Ground Escapement	0	0	0	0	0	0

Fallert Creek Hatchery Fall Chinook						
Disposition of Recovery	1994		1993		1992	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	12	297	10	252	14	391
Canada	0	0	8	201	19	530
Oregon	0	0	6	151	1	28
California	0	0	0	0	0	0
Wa. Coastal Sport	5	126	0	0	0	0
Columbia Estuary Sport	0	0	9	226	0	0
Lower Columbia Sport	0	0	0	0	5	139
Terminal Sport	0	0	0	0	0	0
WA Commercial\Treaty Coastal	0	0	0	0	0	0
Columbia Commercial\Treaty	0	0	0	0	2	56
Hatchery Escapement	17	428	38	956	53	1478
Spawning Ground Escapement	8	201	15	377	24	669

Fallert Creek Hatchery Spring Chinook						
Disposition of Recovery	1994		1993		1992	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	12	47	6	31	0	0
Canada	0	0	4	21	4	21
Oregon	0	0	0	0	6	31
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	0	0	0	0
Columbia Estuary Sport	0	0	0	0	0	0
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	9	36	0	0	0	0
WA Commercial\Treaty Coastal	0	0	2	10	0	0
Columbia Commercial\Treaty	1	4	3	15	0	0
Hatchery Escapement	34	134	102	523	38	197
Spawning Ground Escapement	10	40	0	0	8	42

Disposition of Recovery	1991		1990		1989	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	2	5	19	94
Canada	4	20	23	60	27	134
Oregon	1	5	1	3	15	75
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	4	10	6	30
Columbia Estuary Sport	0	0	0	0	0	0
Lower Columbia Sport	0	0	16	42	0	0
Terminal Sport	0	0	89	232	91	452
WA Commercial\Treaty Coastal	0	0	10	26	13	65
Columbia Commercial\Treaty	0	0	0	0	2	10
Hatchery Escapement	37	189	257	669	157	780
Spawning Ground Escapement	5	25	100	260	70	348

Fallert Creek Hatchery		Fall (Type S) Coho				
Disposition of Recovery	1997		1996		1995	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	0	0	0	0
Canada	0	0	0	0	0	0
Oregon	16	294	0	0	0	0
California	0	0	0	0	0	0
Wa. Coastal Sport	30	552	33	639	13	231
Columbia Estuary Sport	14	258	0	0	9	160
Lower Columbia Sport	0	0	0	0	11	195
Terminal Sport	0	0	0	0	0	0
WA Commercial\Treaty Coastal	0	0	0	0	0	0
Columbia Commercial\Treaty	6	110	14	271	34	604
Hatchery Escapement	161	2963	48	930	209	3714
Spawning Ground Escapement	0	0	0	0	0	0

Grays River Hatchery		Fall Chinook				
Disposition of Recovery	1994		1993		1992	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	3	3	2	2	0	0
Canada	11	11	7	9	0	0
Oregon	1	1	4	5	2	8
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	0	0	3	12
Columbia Estuary Sport	2	2	3	4	3	12
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	0	0	0	0	0	0
WA Commercial\Treaty Coastal	2	2	0	0	0	0
Columbia Commercial\Treaty	2	2	11	13	3	12
Hatchery Escapement	11	11	25	30	57	230
Spawning Ground Escapement	8	8	0	0	5	20
Disposition of Recovery		1991		1990		1989
Disposition of Recovery	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	3	15	12	63
Canada	3	14	43	211	69	361
Oregon	0	0	0	0	3	16
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	7	34	5	26
Columbia Estuary Sport	3	14	0	0	0	0
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	0	0	0	0	0	0
WA Commercial\Treaty Coastal	0	0	3	15	11	57
Columbia Commercial\Treaty	0	0	9	44	30	157
Hatchery Escapement	11	52	37	181	52	272
Spawning Ground Escapement	5	24	3	15	8	42

Grays River Hatchery		Fall (Type S) Coho					
Disposition of Recovery	1997		1996		1994		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	0	0	0	0	0	0	
Canada	0	0	0	0	0	0	
Oregon	124	932	8	43	1	6	
California	0	0	6	32	0	0	
Wa. Coastal Sport	82	616	11	59	13	75	
Columbia Estuary Sport	41	308	0	0	12	69	
Lower Columbia Sport	0	0	0	0	0	0	
Terminal Sport	0	0	0	0	0	0	
WA Commercial\Treaty Coastal	18	135	0	0	0	0	
Columbia Commercial\Treaty	268	2014	35	187	24	139	
Hatchery Escapement	777	5838	7	37	92	532	
Spawning Ground Escapement	0	0	0	0	0	0	

Kalama Falls Hatchery		Fall Chinook					
Disposition of Recovery	1994		1993		1992		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	0	0	19	674	21	888	
Canada	7	282	30	1064	8	338	
Oregon	0	0	4	142	0	0	
California	0	0	0	0	0	0	
Wa. Coastal Sport	0	0	0	0	7	296	
Columbia Estuary Sport	0	0	2	71	0	0	
Lower Columbia Sport	0	0	0	0	7	296	
Terminal Sport	0	0	0	0	0	0	
WA Commercial\Treaty Coastal	0	0	0	0	0	0	
Columbia Commercial\Treaty	0	0	2	71	0	0	
Hatchery Escapement	34	1371	87	3086	61	2580	
Spawning Ground Escapement	0	0	15	532	96	4060	

Kalama Falls Hatchery		Late (Type N) Coho					
Disposition of Recovery	1997		1996		1995		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	0	0	0	0	0	0	
Canada	0	0	0	0	0	0	
Oregon	57	2266	0	0	8	51	
California	0	0	0	0	0	0	
Wa. Coastal Sport	109	4334	70	2534	12	76	
Columbia Estuary Sport	10	398	0	0	4	25	
Lower Columbia Sport	0	0	0	0	0	0	
Terminal Sport	0	0	0	0	0	0	
WA Commercial\Treaty Coastal	21	835	3	109	0	0	
Columbia Commercial\Treaty	233	9264	139	5032	3	19	
Hatchery Escapement	138	5487	21	760	47	298	
Spawning Ground Escapement	0	0	0	0	0	0	

Klickitat Hatchery		Fall Chinook					
Disposition of Recovery		1994		1993		1992	
		Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska		38	787	283	6623	101	1884
Canada		21	435	185	4329	15	280
Oregon		3	62	12	281	5	93
California		3	62	0	0	0	0
Wa. Coastal Sport		0	0	21	491	0	0
Columbia Estuary Sport		2	41	9	211	0	0
Lower Columbia Sport		0	0	33	772	12	224
Terminal Sport		0	0	0	0	0	0
WA Commercial\Treaty Coastal		0	0	5	117	4	75
Columbia Commercial\Treaty		14	290	166	3885	102	1902
Hatchery Escapement		1	21	27	632	14	261
Spawning Ground Escapement		101	2091	0	0	9	168
Disposition of Recovery		1991		1990		1989	
Disposition of Recovery		Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska		10	189	75	1710	42	753
Canada		3	57	87	1983	55	987
Oregon		0	0	54	1231	2	36
California		0	0	0	0	0	0
Wa. Coastal Sport		0	0	2	46	2	36
Columbia Estuary Sport		0	0	0	0	0	0
Lower Columbia Sport		0	0	1	23	0	0
Terminal Sport		0	0	0	0	0	0
WA Commercial\Treaty Coastal		0	0	0	0	0	0
Columbia Commercial\Treaty		7	132	69	1573	23	413
Hatchery Escapement		2	38	11	251	0	0
Spawning Ground Escapement		14	264	125	2850	14	251

Klickitat Hatchery		Spring Chinook					
Disposition of Recovery		1994		1993		1992	
		Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska		0	0	3	17	18	38
Canada		0	0	0	0	11	23
Oregon		0	0	2	12	24	50
California		0	0	0	0	0	0
Wa. Coastal Sport		0	0	0	0	0	0
Columbia Estuary Sport		0	0	0	0	0	0
Lower Columbia Sport		0	0	0	0	0	0
Terminal Sport		5	14	4	23	19	40
WA Commercial\Treaty Coastal		0	0	0	0	6	13
Columbia Commercial\Treaty		0	0	0	0	0	0
Hatchery Escapement		35	101	265	1540	1250	2618
Spawning Ground Escapement		0	0	0	0	0	0

Klickitat SpCh Disposition of Recovery	1991		1990		1989	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	5	7	14	55
Canada	23	77	2	3	1	4
Oregon	6	20	3	4	44	172
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	0	0	0	0
Columbia Estuary Sport	0	0	0	0	0	0
Lower Columbia Sport	7	23	0	0	5	20
Terminal Sport	4	13	0	0	32	125
WA Commercial\Treaty Coastal	0	0	0	0	1	4
Columbia Commercial\Treaty	0	0	0	0	12	47
Hatchery Escapement	390	1305	171	233	562	2202
Spawning Ground Escapement	0	0	2	3	8	31

Klickitat Hatchery Disposition of Recovery	Late (Type N) Coho			
	1997		1996	
	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	0	0
Canada	0	0	0	0
Oregon	0	0	0	2
California	0	0	0	0
Wa. Coastal Sport	12	224	5	56
Columbia Estuary Sport	2	227	0	0
Lower Columbia Sport	1	119	0	0
Terminal Sport	0	0	0	0
WA Commercial\Treaty Coastal	0	0	2	23
Columbia Commercial\Treaty	21	393	3	34
Hatchery Escapement	0	0	0	3
Spawning Ground Escapement	0	0	0	0

Lewis River Hatchery Disposition of Recovery	Spring Chinook			
	1994		1993	
	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	28	245	21	192
Canada	9	79	7	64
Oregon	0	0	5	46
California	0	0	0	0
Wa. Coastal Sport	0	0	0	0
Columbia Estuary Sport	0	0	3	27
Lower Columbia Sport	0	0	0	0
Terminal Sport	36	315	12	110
WA Commercial\Treaty Coastal	0	0	0	0
Columbia Commercial\Treaty	1	9	0	0
Hatchery Escapement	172	1506	89	815
Spawning Ground Escapement	41	359	0	0

Lewis SpCh cont. Disposition of Recovery	1991		1990		1989	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	2	17	10	94	57	400
Canada	8	67	26	245	62	435
Oregon	0	0	5	47	6	42
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	2	19	17	119
Columbia Estuary Sport	0	0	13	122	9	63
Lower Columbia Sport	0	0	0	0	9	63
Terminal Sport	6	50	383	3604	272	1907
WA Commercial\Treaty Coastal	0	0	0	0	33	231
Columbia Commercial\Treaty	0	0	0	0	8	56
Hatchery Escapement	21	176	196	1845	73	512
Spawning Ground Escapement	0	0	26	245	101	708

Lewis River Hatchery Fall (Type S) Coho Disposition of Recovery	1997		1996		1995	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	0	0	3	21
Canada	0	0	0	0	0	0
Oregon	164	1005	0	0	7	49
California	0	0	0	0	0	0
Wa. Coastal Sport	248	1519	119	264	65	451
Columbia Estuary Sport	60	368	0	0	12	83
Lower Columbia Sport	0	0	17	38	20	139
Terminal Sport	0	0	0	0	0	0
WA Commercial\Treaty Coastal	24	147	7	16	6	42
Columbia Commercial\Treaty	12	74	38	84	11	76
Hatchery Escapement	3211	19673	557	1236	913	6340
Spawning Ground Escapement	0	0	0	0	0	0

Lewis River Hatchery Late (Type N) Coho Disposition of Recovery	1997		1996		1995	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	0	0	0	0
Canada	4	101	0	0	0	0
Oregon	235	5913	0	0	1	28
California	0	0	0	0	0	0
Wa. Coastal Sport	371	9335	130	4063	24	672
Columbia Estuary Sport	6	151	1	31	6	168
Lower Columbia Sport	7	176	0	0	0	0
Terminal Sport	0	0	0	0	0	0
WA Commercial\Treaty Coastal	19	478	28	875	2	56
Columbia Commercial\Treaty	735	18495	285	8908	2	56
Hatchery Escapement	2139	53823	77	2407	378	10585
Spawning Ground Escapement	0	0	0	0	0	0

Lyon's Ferry Hatchery Fall Chinook							
Disposition of Recovery	1994		1993		1992		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	140	140	127	128	70	71	
Canada	113	113	323	324	235	238	
Oregon	92	92	0	0	367	372	
California	0	0	3	3	19	19	
Wa. Coastal Sport	53	53	107	107	39	39	
Columbia Estuary Sport	29	29	3	3	17	17	
Lower Columbia Sport	44	44	0	0	85	86	
Terminal Sport	0	0	0	0	27	27	
WA Commercial\Treaty Coastal	44	44	122	123	72	73	
Columbia Commercial\Treaty	332	333	0	0	942	954	
Hatchery Escapement	1708	1711	3278	3292	1870	1893	
Spawning Ground Escapement	21	21	7	7	24	24	
Disposition of Recovery	1991		1990		1989		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	16	16	57	58	26	163	
Canada	176	178	206	210	129	810	
Oregon	64	65	5	5	16	100	
California	6	6	3	3	0	0	
Wa. Coastal Sport	12	12	5	5	14	88	
Columbia Estuary Sport	3	3	3	3	7	44	
Lower Columbia Sport	0	0	0	0	0	0	
Terminal Sport	0	0	0	0	0	0	
WA Commercial\Treaty Coastal	5	5	23	23	14	88	
Columbia Commercial\Treaty	153	155	146	149	58	364	
Hatchery Escapement	765	775	605	617	206	1293	
Spawning Ground Escapement	0	0	34	35	14	88	

Methow Hatchery Spring Chinook							
Disposition of Recovery	1994		1993		1992		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	0	0	0	0	0	0	
Canada	0	0	0	0	0	0	
Oregon	0	0	9	9	0	0	
California	0	0	0	0	0	0	
Wa. Coastal Sport	0	0	0	0	0	0	
Columbia Estuary Sport	0	0	0	0	0	0	
Lower Columbia Sport	0	0	0	0	0	0	
Terminal Sport	0	0	0	0	0	0	
WA Commercial\Treaty Coastal	0	0	0	0	0	0	
Columbia Commercial\Treaty	0	0	0	0	0	0	
Hatchery Escapement	8	8	293	299	60	61	
Spawning Ground Escapement	0	0	0	0	0	0	

North Toutle Hatchery Fall Chinook							
Disposition of Recovery	1994		1993		1992		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	0	0	14	312	4	155	
Canada	10	309	14	312	0	0	
Oregon	0	0	3	67	0	0	
California	0	0	0	0	0	0	
Wa. Coastal Sport	0	0	10	223	3	116	
Columbia Estuary Sport	0	0	3	67	0	0	
Lower Columbia Sport	0	0	14	312	0	0	
Terminal Sport	0	0	0	0	0	0	
WA Commercial\Treaty Coastal	0	0	0	0	2	77	
Columbia Commercial\Treaty	0	0	2	45	0	0	
Hatchery Escapement	5	155	118	2631	13	503	
Spawning Ground Escapement	3	93	0	0	0	0	
Disposition of Recovery	1991		1990		1989		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	0	0	11	199	0	0	
Canada	6	100	30	542	0	0	
Oregon	0	0	1	18	0	0	
California	0	0	0	0	0	0	
Wa. Coastal Sport	0	0	5	90	0	0	
Columbia Estuary Sport	0	0	3	54	0	0	
Lower Columbia Sport	0	0	4	72	0	0	
Terminal Sport	0	0	31	560	31	1093	
WA Commercial\Treaty Coastal	0	0	0	0	0	0	
Columbia Commercial\Treaty	0	0	0	0	0	0	
Hatchery Escapement	6	100	98	1769	4	141	
Spawning Ground Escapement	13	216	34	614	0	0	

North Toutle Hatchery Fall (Type S) Coho							
Disposition of Recovery	1997		1996		1995		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	0	0	0	0	2	31	
Canada	0	0	0	0	1	15	
Oregon	68	2200	0	0	9	139	
California	0	0	3	111	0	0	
Wa. Coastal Sport	66	2136	58	2149	52	804	
Columbia Estuary Sport	22	712	0	0	5	77	
Lower Columbia Sport	45	1456	11	408	48	742	
Terminal Sport	0	0	0	0	0	0	
WA Commercial\Treaty Coastal	0	0	0	0	0	0	
Columbia Commercial\Treaty	23	744	32	1186	40	618	
Hatchery Escapement	506	16373	8	296	412	6370	
Spawning Ground Escapement	0	0	0	0	0	0	

Priest Rapids Hatchery		Fall Chinook					
Disposition of Recovery		1994		1993		1992	
		Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska		22	940	184	8473	42	322
Canada		0	0	86	3960	18	138
Oregon		0	0	24	1105	4	31
California		0	0	0	0	0	0
Wa. Coastal Sport		0	0	17	783	6	46
Columbia Estuary Sport		0	0	16	737	0	0
Lower Columbia Sport		11	470	47	2164	10	77
Terminal Sport		8	342	27	1243	15	115
WA Commercial\Treaty Coastal		0	0	1	46	6	46
Columbia Commercial\Treaty		23	983	330	15197	115	880
Hatchery Escapement		36	1538	590	27170	207	1585
Spawning Ground Escapement		8	342	44	2026	28	214
Disposition of Recovery		1991		1990		1989	
		Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska		5	102	160	4278	65	2149
Canada		3	61	219	5856	128	4232
Oregon		0	0	5	134	9	298
California		0	0	0	0	0	0
Wa. Coastal Sport		0	0	8	214	15	496
Columbia Estuary Sport		0	0	0	0	4	132
Lower Columbia Sport		0	0	12	321	0	0
Terminal Sport		0	0	41	1096	10	331
WA Commercial\Treaty Coastal		0	0	0	0	0	0
Columbia Commercial\Treaty		10	204	166	4439	100	3306
Hatchery Escapement		36	735	507	13556	220	7273
Spawning Ground Escapement		27	551	100	2674	44	1455

Ringold Hatchery		Fall Chinook					
Disposition of Recovery		1994					
		Tag Rec	Expanded				
Alaska		2	23				
Canada		10	115				
Oregon		0	0				
California		0	0				
Wa. Coastal Sport		0	0				
Columbia Estuary Sport		2	23				
Lower Columbia Sport		0	0				
Terminal Sport		0	0				
WA Commercial\Treaty Coastal		2	23				
Columbia Commercial\Treaty		6	69				
Hatchery Escapement		4	46				
Spawning Ground Escapement		14	161				

Ringold Hatchery		Spring Chinook				
Disposition of Recovery	1994		1993		1992	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	0	0	0	0
Canada	0	0	0	0	0	0
Oregon	0	0	1	34	0	0
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	0	0	0	0
Columbia Estuary Sport	0	0	0	0	0	0
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	8	212	0	0	4	114
WA Commercial\Treaty Coastal	0	0	0	0	0	0
Columbia Commercial\Treaty	0	0	0	0	0	0
Hatchery Escapement	24	636	28	953	52	1479
Spawning Ground Escapement	0	0	0	0	0	0
Disposition of Recovery	1991		1990		1989	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	0	0	0	0
Canada	0	0	0	0	0	0
Oregon	1	15	2	70	16	457
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	0	0	0	0
Columbia Estuary Sport	0	0	0	0	0	0
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	0	0	0	0	105	2998
WA Commercial\Treaty Coastal	0	0	0	0	0	0
Columbia Commercial\Treaty	0	0	3	105	0	0
Hatchery Escapement	11	165	53	1849	42	1199
Spawning Ground Escapement	0	0	0	0	12	343

Tucannon Hatchery		Spring Chinook				
Disposition of Recovery	1994		1993		1992	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	0	0	0	0
Canada	0	0	3	3	2	2
Oregon	0	0	3	3	3	3
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	0	0	0	0
Columbia Estuary Sport	0	0	0	0	0	0
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	0	0	0	0	0	0
WA Commercial\Treaty Coastal	0	0	0	0	0	0
Columbia Commercial\Treaty	0	0	0	0	0	0
Hatchery Escapement	24	24	140	143	64	66
Spawning Ground Escapement	8	8	6	6	35	36

Tucannon SpCh cont.						
Disposition of Recovery	1991		1990		1989	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	0	0	0	0	0	0
Canada	0	0	0	0	0	0
Oregon	3	3	0	0	10	10
California	0	0	0	0	0	0
Wa. Coastal Sport	0	0	0	0	0	0
Columbia Estuary Sport	0	0	0	0	0	0
Lower Columbia Sport	0	0	0	0	0	0
Terminal Sport	0	0	0	0	0	0
WA Commercial\Treaty Coastal	0	0	0	0	2	2
Columbia Commercial\Treaty	0	0	0	0	0	0
Hatchery Escapement	24	25	19	19	55	56
Spawning Ground Escapement	3	3	6	6	191	193

Turtle Rock Hatchery Fall Chinook						
Disposition of Recovery	1994		1993		1992	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	49	219	305	882	87	938
Canada	17	76	268	775	60	647
Oregon	7	31	12	35	7	76
California	1	4	0	0	0	0
Wa. Coastal Sport	0	0	41	119	15	162
Columbia Estuary Sport	0	0	41	119	5	54
Lower Columbia Sport	3	13	78	226	26	280
Terminal Sport	0	0	42	121	16	173
WA Commercial\Treaty Coastal	5	22	9	26	11	119
Columbia Commercial\Treaty	16	71	506	1463	218	2351
Hatchery Escapement	113	505	15	43	20	216
Spawning Ground Escapement	44	197	35	101	8	86
Disposition of Recovery	1991		1990		1989	
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska	22	51	9	21	53	528
Canada	27	62	26	61	181	1804
Oregon	8	18	54	126	11	110
California	0	0	0	0	0	0
Wa. Coastal Sport	4	9	0	0	15	150
Columbia Estuary Sport	0	0	0	0	4	40
Lower Columbia Sport	4	9	0	0	16	159
Terminal Sport	6	14	0	0	2	20
WA Commercial\Treaty Coastal	6	14	0	0	21	209
Columbia Commercial\Treaty	68	156	10	23	147	1465
Hatchery Escapement	9	21	5	12	122	1216
Spawning Ground Escapement	33	76	2	5	18	179

Washougal Hatchery		Fall Chinook					
Disposition of Recovery	1994		1993		1992		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	3	105	40	1292	19	751	
Canada	4	140	28	905	31	1226	
Oregon	0	0	3	97	4	158	
California	0	0	0	0	0	0	
Wa. Coastal Sport	0	0	9	291	0	0	
Columbia Estuary Sport	0	0	0	0	0	0	
Lower Columbia Sport	0	0	11	355	10	395	
Terminal Sport	0	0	20	646	16	633	
WA Commercial\Treaty Coastal	1	35	5	162	11	435	
Columbia Commercial\Treaty	1	35	4	129	13	514	
Hatchery Escapement	34	1194	247	7981	339	13402	
Spawning Ground Escapement	37	1299	15	485	53	2095	
Disposition of Recovery	1991		1990		1989		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	10	751	10	833	10	785	
Canada	10	751	35	2917	33	2592	
Oregon	2	150	0	0	12	942	
California	0	0	0	0	0	0	
Wa. Coastal Sport	0	0	0	0	14	1099	
Columbia Estuary Sport	0	0	3	250	0	0	
Lower Columbia Sport	0	0	7	583	0	0	
Terminal Sport	0	0	0	0	0	0	
WA Commercial\Treaty Coastal	0	0	2	167	15	1178	
Columbia Commercial\Treaty	0	0	5	417	9	707	
Hatchery Escapement	47	3528	113	9417	51	4005	
Spawning Ground Escapement	15	1126	40	3334	33	2592	

Washougal Hatchery		Late (Type N) Coho					
Disposition of Recovery	1997		1996		1995		
	Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded	
Alaska	0	0	0	0	0	0	
Canada	0	0	0	0	0	0	
Oregon	204	8160	0	0	0	0	
California	4	160	0	0	0	0	
Wa. Coastal Sport	321	12840	98	5458	11	49	
Columbia Estuary Sport	15	600	0	0	2	9	
Lower Columbia Sport	102	4080	7	390	0	0	
Terminal Sport	0	0	0	0	0	0	
WA Commercial\Treaty Coastal	41	1640	11	613	0	0	
Columbia Commercial\Treaty	649	25960	145	8075	3	13	
Hatchery Escapement	540	21600	8	446	119	526	
Spawning Ground Escapement	0	0	0	0	0	0	

Wells Hatchery		Summer Chinook					
Disposition of Recovery		1994		1993		1992	
		Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska		33	37	12	12	58	92
Canada		2	2	3	3	17	27
Oregon		0	0	0	0	34	54
California		2	2	0	0	0	0
Wa. Coastal Sport		0	0	0	0	0	0
Columbia Estuary Sport		0	0	0	0	0	0
Lower Columbia Sport		0	0	0	0	4	6
Terminal Sport		0	0	0	0	0	0
WA Commercial\Treaty Coastal		0	0	0	0	2	3
Columbia Commercial\Treaty		0	0	3	3	0	0
Hatchery Escapement		101	112	21	21	153	242
Spawning Ground Escapement		2	2	0	0	0	0
Disposition of Recovery		1991		1990		1989	
Disposition of Recovery		Tag Rec	Expanded	Tag Rec	Expanded	Tag Rec	Expanded
Alaska		3	13	4	13	5	37
Canada		0	0	19	64	21	157
Oregon		0	0	0	0	0	0
California		0	0	0	0	0	0
Wa. Coastal Sport		0	0	0	0	0	0
Columbia Estuary Sport		4	18	0	0	0	0
Lower Columbia Sport		0	0	0	0	0	0
Terminal Sport		0	0	0	0	0	0
WA Commercial\Treaty Coastal		0	0	0	0	1	7
Columbia Commercial\Treaty		0	0	2	7	6	45
Hatchery Escapement		20	88	46	155	24	179
Spawning Ground Escapement		0	0	0	0	0	0

Appendix E. Explanation of categories used in the disposition of recovery column in the tables providing information on tag recoveries and percent of tag recovery by disposition.

Alaska- includes all recoveries in Alaskan fisheries, freshwater or ocean.

Canada- includes all recoveries in Canadian fisheries, freshwater or ocean.

Oregon- includes all recoveries in Oregon fisheries, freshwater or ocean.

California- includes all recoveries in California fisheries, freshwater or ocean.

Wa. Coastal Sport- Includes recoveries from the sport fishery off the coast of Washington.

Columbia Estuary Sport- Includes recoveries from the “buoy 10” fishery at the mouth of the Columbia River.

Lower Columbia Sport- Includes recoveries from the lower Columbia main-stem sport fisheries.

Terminal Sport- Includes recoveries from freshwater sport fishing in Washington that does not fall under the Lower Columbia Sport category.

WA Commercial\Treaty Coastal- Includes recoveries from commercial or treaty fisheries occurring off the coast of Washington.

Columbia Commercial\Treaty- Includes recoveries from Columbia River commercial or treaty fisheries.

Hatchery Escapement- Includes all hatchery related recoveries.

Spawning Ground Escapement- Includes all recoveries from spawning grounds.